

Environmental Science and Engineering

Environmental Science

Series Editors

Ulrich Förstner, Technical University of Hamburg-Harburg, Hamburg, Germany

Wim H. Rulkens, Department of Environmental Technology, Wageningen,
The Netherlands

Wim Salomons, Institute for Environmental Studies, University of Amsterdam,
Haren, The Netherlands

The protection of our environment is one of the most important challenges facing today's society. At the focus of efforts to solve environmental problems are strategies to determine the actual damage, to manage problems in a viable manner, and to provide technical protection. Similar to the companion subseries Environmental Engineering, Environmental Science reports the newest results of research. The subjects covered include: air pollution; water and soil pollution; renaturation of rivers; lakes and wet areas; biological ecological; and geochemical evaluation of larger regions undergoing rehabilitation; avoidance of environmental damage. The newest research results are presented in concise presentations written in easy to understand language, ready to be put into practice.

More information about this subseries at <http://www.springer.com/series/3234>

Mohamed Ksibi · Achraf Ghorbal · Sudip Chakraborty ·
Helder I. Chaminé · Maurizio Barbieri · Giulia Guerriero ·
Olfa Hentati · Abdelazim Negm · Anthony Lehmann ·
Jörg Römbke · Armando Costa Duarte · Elena Xoplaki ·
Nabil Khélifi · Gilles Colinet · João Miguel Dias ·
Imed Gargouri · Eric D. Van Hullebusch ·
Benigno Sánchez Cabrero · Settimio Ferlisi ·
Chedly Tizaoui · Amjad Kallel · Sami Rtimi ·
Sandeep Panda · Philippe Michaud · Jaya Narayana Sahu ·
Mongi Seffen · Vincenzo Naddeo

Editors

Recent Advances in Environmental Science from the Euro-Mediterranean and Surrounding Regions (2nd Edition)

Proceedings of 2nd Euro-Mediterranean Conference
for Environmental Integration (EMCEI-2), Tunisia 2019

Editors

Mohamed Ksibi
High Institute of Biotechnology
University of Sfax
Sfax, Tunisia

Sudip Chakraborty
University of Calabria
Rende, Cosenza, Italy

Maurizio Barbieri
Università degli Studi di Roma
Roma, Roma, Italy

Olfa Hentati
High Institute of Biotechnology
University of Sfax
Sfax, Tunisia

Anthony Lehmann
University of Geneva
Genève, Geneva, Switzerland

Armando Costa Duarte
Centre for Environmental+Marine Studies
University of Aveiro
Aveiro, Portugal

Nabil Khélifi
Springer Nature
Heidelberg, Baden-Württemberg, Germany

João Miguel Dias
University of Aveiro
Aveiro, Portugal

Eric D. Van Hullebusch
Institut de Physique du Globe de Paris
Université de Paris
Paris, France

Settimio Ferlisi
Department of Civil Engineering
University of Salerno
Fisciano, Italy

Achraf Ghorbal
Appliquées et Technologies
Institut Supérieur des Sciences
Gabès, Tunisia

Helder I. Chaminé
School of Engineering (ISEP)
Polytechnic of Porto
Porto, Portugal

Giulia Guerriero
University of Naples
Naples, Italy

Abdelazim Negm
Faculty of Engineering, Water and Water
Structure Engineering Department
Zagazig University
Zagazig, Egypt

Jörg Römbke
ECT Oekotoxikologie GmbH
Flörsheim am Main, Hessen, Germany

Elena Xoplaki
Department of Geography
Justus-Liebig-University Giessen
Gießen, Hessen, Germany


Gilles Colinet
Gembloux Agro-Bio Tech
University of Liège
Gembloux, Belgium

Imed Gargouri
Faculty of Medicine of Sfax
University of Sfax
Sfax, Tunisia

Benigno Sánchez Cabrero
FOTOAIR-CIEMAT
Madrid, Madrid, Spain

Chedly Tizaoui
College of Engineering
Swansea University
Swansea, UK

Amjad Kallel
Sfax National School of Engineering
University of Sfax
Sfax, Tunisia

Sandeep Panda 
Department of Mining Engineering
Suleyman Demirel University
Isparta, Turkey

Jaya Narayana Sahu
Institute of Chemical Technology
University of Stuttgart
Stuttgart, Baden-Württemberg, Germany

Vincenzo Naddeo
SEED DICIV
University of Salerno
Fisciano, Italy

Sami Rtimi
Swiss Federal Institute of Technology
Lausanne, Switzerland

Philippe Michaud
Université Clermont Auvergne, Polytech
Aubière, France

Mongi Seffen
High School of Science and Technology
University of Sousse
Sousse, Tunisia

Preface

The Euro-Mediterranean and surrounding regions are currently facing accelerating environmental degradation. In the context of fast population growth, developing living standards, modernization and rapid industrialization, environmental challenges will continue and even be exacerbated in the years to come. These challenges reinforce the need to stimulate the environmental integration process by including environmental awareness, assessment, remediation and mitigation in concrete cooperative projects in the various sectors, and, most importantly, by highlighting the importance to decision-makers from the relevant sectors of integrating environmental considerations into their activities.

The integration of environmental concerns into policy decisions (i.e. environmental integration) must be intensified in order to move towards sustainable development. This is in line with the vision and plan of the European Commission for the Environment and other official organizations whose mission is to protect, preserve and improve both shores of the Euro-Mediterranean environment and their natural resources for present and future generations to ensure prosperity and social cohesion.

To stimulate the environmental integration process, it is the responsibility of scientists to consider opportunities to highlight research into potential solutions for environmental concerns and protection requirements based on innovative approaches that contribute to the preservation of a sustainable environment in the region.

In this context, the best contributions to the 2nd Euro-Mediterranean Conference on Environmental Integration (EMCEI-2019: www.emcei.net) were selected for this edited volume in order to emphasize the importance of the environmental integration process by considering the latest outcomes from interdisciplinary research (natural sciences, technology and engineering, and social sciences) with a broader focus on solution-based sustainability research, combined with a regional dimension: the Euro-Mediterranean area (which encompasses all the countries surrounding the Mediterranean) to bring recommendations and solutions for many common environmental issues, as well as mutual lessons learned.

Topics covered include approaches and methods for environmentally sustainable innovation; environmental risk assessment; bioremediation; eco-toxicology; water quality management; management of natural resources, including water resources

and georesources; renewable energy; waste valorization and management; sustainable marine and coastal area management; geo- and natural hazards such as earthquakes, landslides and others; geotechnical and geo-environmental engineering; remote sensing and GIS for geo-environmental investigations; the impact of natural and social environments on human health; among others.

In addition to the aforementioned, this environmental integration process in the Euro-Mediterranean region can only achieve its goals through the stimulation of initiatives that reduce the development gap between the two shores of the Mediterranean and that create new and closer political, economic, social, cultural and, in particular, scientific ties, founded on shared concerns which develop and integrate environmental research in the region.

In this context, Springer and the Editorial office of the *Euro-Mediterranean Journal for Environmental Integration* organized the second edition of EMCEI which was held in Sousse, Tunisia in October 2019 following the 1st EMCEI launched in 2017. In response to the conference's call for papers, more than 600 papers were submitted by authors from 58 different countries, demonstrating the global relevance of EMCEI. Following peer review, 373 papers from the geo- and bio-environmental sciences and engineering were ultimately accepted, thus making an essential contribution to the science and knowledge bases to promote a more sustainable environment for the Euro-Mediterranean region.

The short papers gathered in this volume offer an overview of current research on emerging and ongoing environmental issues and challenges and of how it applies to problems specific to the Euro-Mediterranean region and to surrounding regions so that a broader perspective on related and similar environmental challenges may be gained. Papers are categorized into thirteen broad sections to reflect the main topics addressed at the conference, namely:

1. Engineering applications for environmental management;
2. Process control, simulations and intensification for environmental management;
3. Ecotoxicology, environmental safety and bioremediation;
4. Biotechnology for environmental management;
5. Climate-change-related effects on the environment and ecological systems;
6. Natural resources, agriculture and the environment;
7. Smart technologies for environmentally friendly energy production;
8. Remote sensing and GIS for environmental monitoring and management;
9. Environmental impacts of natural hazards and environmental risk assessment;
10. Sustainable management of marine and coastal environments;
11. Sustainable management of the urban environment;
12. Sustainable management of the indoor and built environment;
13. Environmental-change-related impacts on human health.

Presenting a broad range of topics and results, the 2nd EMCEI offered a valuable opportunity for researchers and students to learn more about recent advances in environmental research initiatives in view of the accelerating environmental degradation of the Euro-Mediterranean region, which has made environmental and

resource protection a dominant priority for sustainable development and societal welfare. We hope scientists and policy makers will find these contributions from the 2nd EMCEI useful in the search to understand and solve some of the most pressing environmental issues for the Mediterranean region.

Sfax, Tunisia	Mohamed Ksibi
Gabes, Tunisia	Achraf Ghorbal
Rende, Italy	Sudip Chakraborty
Porto, Portugal	Helder I. Chaminé
Roma, Italy	Maurizio Barbieri
Naples, Italy	Giulia Guerriero
Sfax, Tunisia	Olfa Hentati
Zagazig, Egypt	Abdelazim Negm
Geneva, Switzerland	Anthony Lehmann
Flörsheim am Main, Germany	Jörg Römbke
Aveiro, Portugal	Armando Costa Duarte
Giessen, Germany	Elena Xoplaki
Heidelberg, Germany	Nabil Khélifi
Liege, Belgium	Gilles Colinet
Aveiro, Portugal	João Miguel Dias
Sfax, Tunisia	Imed Gargouri
Paris, France	Eric D. Van Hullebusch
Madrid, Spain	Benigno Sánchez Cabrero
Salerno, Italy	Settimio Ferlisi
Swansea, UK	Chedly Tizaoui
Sfax, Tunisia	Amjad Kallel
Lausanne, Switzerland	Sami Rtimi
Isparta, Turkey	Sandeep Panda
Aubièrre, France	Philippe Michaud
Stuttgart, Germany	Jaya Narayana Sahu
Sousse, Tunisia	Mongi Seffen
Salerno, Italy	Vincenzo Naddeo
December 2019	

Acknowledgements We are grateful to the authors for their significant contributions. We also wish to thank the conference scientific and technical committees for their valuable help in reviewing the papers. Lastly, our thanks go to the series editors of Environmental Science and Engineering for approving the publication of this volume of proceedings, and to the Springer team for their efficient management of the publication process.

About the 2nd Springer Conference of the *Euro-Mediterranean Journal for Environmental Integration* (EMCEI-2), Tunisia 2019



Currently, the Euro-Mediterranean region is facing not only significant political, economical and social challenges, but also an ever-growing environmental degradation that has made environmental and resource protection an increasingly critical issue. These issues have re-energized the debate on the Euro-Mediterranean integration process through concrete cooperative projects in many sectors, especially those concerned with environmental awareness, assessment and improvement. This integration process is intended to reduce the development gap between the northern and southern coasts of the Mediterranean and to create new and closer political, economical, social, cultural and, most importantly, scientific ties between these two shores founded on common concerns.



In this context, and with the specific aim to promote Euro-Mediterranean scientific partnership so as to develop and integrate environmental research and findings into the activities of related sectors in the region, a group of Euro-Mediterranean scientists have recently launched the *Euro-Mediterranean Journal for Environmental Integration*. This Springer journal, which started in 2016, has been now indexed in the Web of Science (ISI's ESCI database). It offers a scientific platform for presenting and discussing the latest advances in research with a focus on emerging environmental issues and challenges in the region. In particular, this first regional journal from the Euro-Mediterranean, encompassing all disciplines of the earth and environmental

sciences, seeks to make societies and decision-makers from related sectors aware of the importance of integrating environmental considerations into their respective activities. In this context, the journal provides a scientific forum that promotes the exchange of knowledge and fosters collaborations to improve the consistency of environmental management efforts between the countries of the northern and southern shores of the Mediterranean.



To further strengthen Euro-Mediterranean environmental integration, the Editors of the *Euro-Mediterranean Journal for Environmental Integration* organize this year, in close collaboration with Springer, the 2nd Euro-Mediterranean Conference for Environmental Integration (EMCEI-2). The conference aims to gather new research contributions from all disciplines of earth and environmental sciences by Euro-Mediterranean scientists from diverse backgrounds, and thus makes an essential contribution towards ensuring that science and knowledge contribute to the promotion of a more sustainable environment for the Euro-Mediterranean region.

The scientific committee of the 2nd EMCEI invites research papers on all cross-cutting themes of the environmental sciences and engineering, with a main focus on the following thirteen conference tracks:

- Track 1. Engineering applications for environmental management
- Track 2. Process control, simulations and intensification for environmental management
- Track 3. Ecotoxicology, environmental safety and bioremediation
- Track 4. Biotechnology for environmental management
- Track 5. Climate-change-related effects on the environment and ecological systems
- Track 6. Natural resources, agriculture and the environment
- Track 7. Smart technologies for environmentally friendly energy production
- Track 8. Remote sensing and GIS for environmental monitoring and management
- Track 9. Environmental impacts of natural hazards and environmental risk assessment
- Track 10. Sustainable management of marine and coastal environments
- Track 11. Sustainable management of the urban environment
- Track 12. Sustainable management of the indoor and built environment
- Track 13. Environmental-change-related impacts on human health.

The dynamic four-day conference provided more than 400 attendees with opportunities to share their latest unpublished findings and learn the newest environment

studies. The event also allowed attendees to meet and discuss with the journal's editors and reviewers.

More than 600 short contributing papers to the conference were submitted by authors from more than 70 countries. After a pre-conference peer-review process by more than 500 reviewers, 373 papers were accepted. These papers were published as chapters in the conference proceedings by Springer.

The conference proceedings consist of thirteen sections, each edited by the following group of *Euro-Mediterranean Journal for Environmental Integration* (EMJEI) editors and other guest editors:

Section 1: Engineering Applications for Environmental Management

Achraf Ghorbal: Institut Supérieur des Sciences Appliquées et de Technologie de Gabès, Tunisia

Mohamed Ksibi: High Institute of Biotechnology, University of Sfax, Tunisia

Chedly Tizaoui: College of Engineering, Swansea University, United Kingdom

Sami Rtimi: Swiss Federal Institute of Technology, Lausanne, Switzerland,

Vincenzo Naddeo: University of Salerno, Italy

Section 2: Process Control, Simulations and Intensification for Environmental Management

Sudip Chakraborty: Università della Calabria, Italy

Section 3: Ecotoxicology, Environmental Safety and Bioremediation

Olfa Hentati: ISBS, University of Sfax, Tunisia

Achraf Ghorbal: Institut Supérieur des Sciences Appliquées et de Technologie de Gabès, Tunisia

Giulia Guerriero: University of Naples, Italy

Jörg Römbke: ECT Oekotoxikologie GmbH, Flörsheim am Main, Germany

Eric D. Van Hullebusch: Institut de Physique du Globe de Paris, Université de Paris, France

Sandeep Panda: Department of Mining Engineering, Suleyman Demirel University, Isparta, Turkey

Section 4: Biotechnology for Environmental Management

Mohamed Ksibi: High Institute of Biotechnology, University of Sfax, Tunisia

Eric D. van Hullebusch: Institut de Physique du Globe de Paris, Université de Paris, France

Philippe Michaud: Université Clermont Auvergne, Polytech Clermont Ferrand, Aubière, France

Olfa Hentati: ISBS, University of Sfax, Tunisia

Jörg Römbke: ECT Oekotoxikologie GmbH, Flörsheim am Main, Germany

Sandeep Panda: Department of Mining Engineering, Suleyman Demirel University, Isparta, Turkey

Giulia Guerriero: University of Naples, Italy

Section 5: Climate-Change-Related Effects on the Environment and Ecological Systems

Elena Xoplaki: Justus-Liebig-University Giessen, Germany

Nabil Khélifi: Springer, a part of Springer Nature, Heidelberg, Germany

Section 6: Natural Resources, Agriculture and the Environment

Helder I. Chaminé: School of Engineering (ISEP), Polytechnic of Porto, Portugal

Maurizio Barbieri: Università degli Studi di Roma La Sapienza, Italy

Abdelazim Negm: Zagazig University, Egypt

Armando da Costa Duarte: University of Aveiro, Portugal

Gilles Colinet: Gembloux Agro Bio Tech, University of Liege, Belgium

Section 7: Smart Technologies for Environmentally Friendly Energy Production

Jaya Narayana Sahu: Universitat Stuttgart, Germany

Mongi Seffen: High School of Science & Technology, University of Sousse, Tunisia

Section 8: Remote Sensing and GIS for Environmental Monitoring and Management

Anthony Lehmann: Université de Genève, Switzerland

Nabil Khélifi: Springer, a part of Springer Nature, Heidelberg, Germany

Section 9: Environmental Impacts of Natural Hazards and Environmental Risk Assessment

Amjad Kallel: ENIS, University of Sfax, Tunisia

Helder I. Chaminé: School of Engineering (ISEP), Polytechnic of Porto, Portugal

Settimio Ferlisi: University of Salerno, Italy

Maurizio Barbieri: Università degli Studi di Roma La Sapienza, Italy

Section 10: Sustainable Management of Marine and Coastal Environments

João Miguel Dias: University of Aveiro, Portugal

Giulia Guerriero: University of Naples, Italy

Section 11: Sustainable Management of the Urban Environment

Benigno Sánchez Cabrero: FOTOAIR-CIEMAT, Analysis & Photocatalytic Treatment of Pollutants in Air, Madrid, Spain

Nabil Khélifi: Springer, a part of Springer Nature, Heidelberg, Germany

Section 12: Sustainable Management of the Indoor and Built Environment

Benigno Sánchez Cabrero: FOTOAIR-CIEMAT, Analysis & Photocatalytic Treatment of Pollutants in Air, Madrid, Spain

Section 13: Environmental-Change-Related Impacts on Human Health

Imed Gargouri: ENIS and Faculty of Medicine of Sfax, University of Sfax, Sfax,
Tunisia

About the Conference Steering Committee



Honorary Co-Chair

Hamed Ben Dhia

Founder & Advisory Board Member

Euro-Mediterranean Journal for Environmental Integration

ENIS, University of Sfax, Tunisia



Honorary Co-Chair

Wolfgang Cramer

Advisory Board Member

Euro-Mediterranean Journal for Environmental Integration

CNRS, Aix-Marseille University, Aix-en-Provence, France



General Co-Chair

Mohamed Ksibi

Co-Editor-in-Chief

Euro-Mediterranean Journal for Environmental Integration

High Institute of Biotechnology, University of Sfax, Tunisia



General Co-Chair

Markus Stoffel

Co-Editor-in-Chief

Euro-Mediterranean Journal for Environmental Integration

Institute for Environmental Sciences, University of Geneva, Switzerland



Conference Supervisor

Nabil Khélifi

Senior Publishing Editor, MENA program

Journal Publishing Manager

Euro-Mediterranean Journal for Environmental Integration

Springer, a part of Springer Nature, Germany



Scientific Committee Chair

Armando da Costa Duarte

Chief Editor—Track 6

Euro-Mediterranean Journal for Environmental Integration

University of Aveiro, Portugal



Publications Co-Chair

Sami Rtimi

Chief Editor—Track 1

Euro-Mediterranean Journal for Environmental Integration

Swiss Federal Institute of Technology, Lausanne, Switzerland



Publications Co-Chair

Sudip Chakraborty

Chief Editor—Track 2

Journal Development Editor

Euro-Mediterranean Journal for Environmental Integration

University of Calabria, Rende, Italy



Program Co-Chair

Achraf Ghorbal

Journal Development Editor

Euro-Mediterranean Journal for Environmental Integration

ISSAT, University of Gabes, Tunisia



Program Co-Chair

Amjad Kallel

Managing Editor

Euro-Mediterranean Journal for Environmental Integration

ENIS, University of Sfax, Tunisia



Public Relations Co-Chair

Alaa Abdelbary

Vice President—Arab Academy for Science,

Technology and Maritime Transport

Guest of Editorial Board of EMJEI

Alexandria, Egypt



Public Relations Co-Chair

Mongi Seffen

Associate Editor

Euro-Mediterranean Journal for Environmental Integration

ESSTHS, University of Sousse, Tunisia



Proceedings Editorial Manager

Mourad Amer

Editor of Springer/IEREK ASTI Series

Guest of Editorial Board of EMJEI

IEREK, Alexandria, Egypt



Conference Manager

Mohamed Sahbi Moalla

Journal Coordinator

Euro-Mediterranean Journal for Environmental Integration

ISSET, University of Sfax, Tunisia

Contents

Engineering Applications for Environmental Management: Adsorption-Oriented Processes Using Conventional and Non-conventional Adsorbents	
Efficiency of Hybrid Process of Coagulation/Flocculation Followed by Membrane Filtration for the Treatment of Synthetic Vegetable Oil Refinery Wastewater	3
Ghofrane Louhichi, Philippe Moulin, Ahmed Ghrabi, and Imen Khouni	
Fe/Clay Composite as Catalysts for Textile Wastewater Treatment	9
Hajer Chargui, Khalil Lazaar, Hamza Elfil, Walid Hajjaji, and Fakher Jamoussi	
Iron Removal from Groundwater by Adsorption Process onto Activated Carbon Obtained from Pinus Halepensis Cone Wastes	13
Zied Marzougui, Mohamed Damak, Leila Chaari, Sana Ghrab, Abdelhamid Elaissari, and Boubaker Elleuch	
Synthesis and Characterization of Activated Carbon from Pinus Halepensis Cone Wastes: Adsorption Prediction as a Function of Some Physicochemical Characteristics of Activated Carbons	19
Zied Marzougui, Sana Ghrab, Mohamed Damak, Leila Chaari, Abdelhamid Elaissari, and Boubaker Elleuch	
Adsorption of Industrial Dye BzR from Aqueous Solution Using Local Modified Clay	25
Kamel Ismet Benabadji, Zakarya Baouch, and Brahim Bouras	
Adsorption–Desorption of Methylene Blue by Bentonite from Aqueous Solution	33
Nacer Dali, Réda Marouf, Malika Guerrab, Samra Djefal, and Fatima Ouadjenia	

Removal of Disperse Dye from Aqueous Solution by Bottom Ash	39
Fatima Zohra Bennekrouf, Fatima Ouadjenia, and Réda Marouf	
Experimental Study of the Removal of Rhodamine B from Aqueous Solution by Adsorption onto Coffee Waste	45
Soumaya Larous, Abdeslam Hassen Meniai, Nadjet Boulkroune, and Nardjess Bouneb	
Electrochemical Impedance Spectroscopy and Adsorption Study of Carbon Steel in 1 M HCl Solution Containing 2-(2-Methoxybenzylidene) Hydrazine-1-Carbothioamide	53
Hana Ferkous, Souad Djellali, Rachid Sahraoui, Hamza Behloul, Khaoula Saoud, and Alaaddin Çukurovali	
Adsorption Efficiency of Graphene Oxide Toward Cyanine Dyes with Different Alkyl Chain Lengths	59
Abeer Elsherbiny, Ali Gemeay, and Mohamed Salem	
Cu(II) Ions Removal on Functionalized Cellulose Beads from Tunisian Almond (<i>Prunus Dulcis</i>) Shell	65
Najeh Maaloul, Paula Oulego, Manuel Rendueles, Achraf Ghorbal, and Mario Díaz	
Dynamics Modelling of Multicomponent Metal Ions Removal onto Low-Cost Buckwheat Hulls	73
Elwira Tomczak and Wladyslaw Kaminski	
Local Materials and Solid Waste (Sawdust) Valorization in the Treatment of Industrial Synthetic Water Field	79
Youcef Touil, Houria Mesrouk, Widad Aouarib, Djamila Barka, Mohamed Lamine Sekirifa, Mahfoud Hadj-Mahammed, and Abdeltif Amrane	
Cationic Dye Removal Using Alginate–Organobentonite Composite Beads	85
Asma Oussalah and Abdelhamid Boukerroui	
Successive Removal of Methylene Blue and Congo Red by Biomass-Based Beads from Aqueous Solutions	91
Hana Boubaker, Rim Ben Arfi, and Achraf Ghorbal	
Malachite Green Removal Ability of a New Low-Temperature Alkali-Treated Almond Shell Adsorbent.	97
Rim Ben Arfi, Khawla Guiza, Karine Mougín, and Achraf Ghorbal	
Low-Cost Magnetic Adsorbents for Water Remediation	103
Nadia Chekalil, Salima Saidi-Besbes, and Abdelhamid Elaissari	

Optimization of Simultaneous Removal of Binary Toxic Antibiotic and Heavy Metal by Novel Biocomposite Beads: Modeling Study Using Brouers–Sotolongo Family Equations	107
Sarra Karoui, Rim Ben Arfi, María J. Fernández-Sanjurjo, Avelino Nuñez-Delgado, Achraf Ghorbal, and Esperanza Álvarez-Rodríguez	
Application of Almond Shell-Based Materials for Aquatic Pollutants Removal: A Mini-Review	115
Achraf Ghorbal and Rim Ben Arfi	
Fabrication of Novel Keratin/Cellulose-Based Composites for Oils and Organic Solvents Absorption	121
Khawla Guiza, Rim Ben Arfi, and Achraf Ghorbal	
Study of the Influence of Some Parameters on the Efficiency of Elimination of Zinc by Synthesized Na–Y Faujasite	127
Hanane Bahaz, Abdelkader Hadj Seyd, Kerroumia Moulai, Fatma Zohra Saifi, and Houria Naimi	
Boron Sorption and Removal Using Hybrid Hydrogel Beads	133
Joanna Kluczka, Alicja Kazek-Kęsik, and Gabriela Dudek	
Engineering Applications for Environmental Management: Advanced Wastewater Treatment Technologies, Recycling and Reuse	
Reuse of Industrial Water at Mellitah Complex	141
Ahmed Mohammed Zaed, Issa M. Baghne, and Fawzi Elshawish	
The Efficiency of Natural Decentralized Greywater Treatment Systems in Resolving the Wastewater Problems in the Rural Areas of Developing Countries	147
Abeer Albalawneh and Nicola Perilli	
Physicochemical Characterization of Wastewater from the Mining Activity: A Case Study from Boukhadra Mine (Algeria)	153
Fella Zenati and Adel Djellali	
Fate of Selected Heavy Metals in a Biological Wastewater Treatment System	157
Yahya El Hammoudani, Fouad Dimane, and Hossain El Ouarghi	
Hydrothermal Carbonization of Olive Pomace Using Olive Mill Wastewater as a Conversion Media	165
Ahmed Amine Azzaz, Mejdı Jeguirim, Camélia Ghimbeu, Simona Bennici, Lionel Limousy, and Salah Jellali	

Ferritization-Based Treatment of Zinc-Containing Wastewater Flows: Influence of Aeration Rates	171
Bogdan Yemchura, Gennady Kochetov, Dmitry Samchenko, and Tatyana Prikhna	
Sonophotocatalytic Degradation of Endocrine Disrupting Chemical 4-cumylphenol in the Presence of Inorganic Oxidant Species in Aqueous Solution	177
Chiha Mahdi, Ahmedchekkat Fatiha, and Chamekh Hayet	
Optimization of Indigo Dye Removal by Continuous Electrocoagulation Process	183
Kamel Hendaoui, Fadhila Ayari, and Malika Trabelsi-Ayadi	
Solid Particle Effect on Oxygen Transfer Rate in Electroflotation Column	189
Maroua Mejri and Lassaad Ben Mansour	
Influence of pH on Oxygen Transfer Rate in Electroflotation Process	195
Nadia Hajlaoui and Lassaad Ben Mansour	
Pervaporation as an Alternative Desalination Method	201
Wladyslaw Kaminski, Elwira Tomczak, and Joanna Marszalek	
Degradation of Orange G by Homogeneous Advanced Oxidation Processes	207
Hayet Chamekh, Mahdi Chiha, and Fatiha Ahmedchekkat	
Photooxidation of NO and NO₂ with TiO₂-Based Materials	213
Silvia Suárez, Alberto E. García de Castro, Mario Escobar, and Benigno Sánchez	
Oxidation of Methylene Blue by Copper via a Heterogeneous Fenton-Like Process	219
Meriem Hamidani, Souad Djerad, and Lakhdar Tifouti	
Engineering Applications for Environmental Management: Optimization of Resources and Waste Management	
Geotechnical Valorization of the Berhoum Area (Algeria) Geological Map for Preparing a Geotechnical Map for Construction	227
Amar Guettouche	
Site Selection Criteria and Design for Landfills in an Arid Area with Shallow Groundwater Depth	233
Ali J. Chabuk, Nadhir Al-Ansari, and Jan Laue	

Environmental Impact Analysis Through the Industrial Lighting Product Life Cycle 239
 Shuyi Wang, Daizhong Su, You Wu, Shifan Zhu, Wentao Kuang, and Ming Ma

Novel Lignin-Reinforced Composites: Thermal Conductivity, Mechanical Behavior, and Water Absorption 245
 Marwa Lahouioui, Rim Ben Arfi, Magali Fois, Laurent Ibos, and Achraf Ghorbal

Used Lamps Recycling in Geopolymers 251
 Walid Hajjaji, Jihene Nouairi, Fernando Rocha, and Hamza Elfil

The Waste Valorization and the Circular Economy in Algeria: An Overview 257
 Fatiha Kazi Aoual-Benslafa and Kawther Touhami

Quantitative Estimation of Municipal Solid Waste in Sulaimaniyah Governorate, Iraq 265
 Karwan Alkaradaghi, Salahalddin Saeed Ali, Nadhir Al-Ansari, Tara Ali, and Jan Laue

Engineering Characteristics of Cement-Stabilized Lateritic Soils for Highway Construction 271
 Omowumi Ademila

Optimization of Cutting Parameters Affecting the Surface Roughness of Al 6061 Dry Milling Machining Using Taguchi Method 279
 S. Sulaiman, A. Aldeehani, M. Alhajji, and W. N. W. Isahak

Environmental Approach, Processing, and Valorization Solid Waste Ceramic Breaks 285
 Mustapha El Kanzaoui, Abdellah Guenbour, Ratiba Boussem, and Abdelwahed Hajjaji

Use of Waste Glass Powder as Partial Replacement of Cement Mortar: Environmental Effects 291
 Abderrezak Khellou, Laid Mechri, and Sofiane Saggai

Effect of Hydroxide Sludge Waste on Mechanical Properties of Masonry Bricks 297
 Souad Kherbache, Nedjima Bouzidi, Salima Chebbi, Siham Aissou, Karim Moussaceb, and Abdelkader Tahakourt

Contribution to the Study of Mechanical Behavior of Granular Media 303
 Souhila Fergani, Mohamed Chikhaoui, Patrick Pizette, and Ammar Nechnech

The Use of Gold Ore Tailings from Amesmesa Mine as a Raw Material in the Ceramic Field	311
Amina Baziz, Nedjima Bouzidi, and Dolores Eliche–Quesada	
Kinetic Study of Waste Tires by Thermogravimetric Analysis (TGA): Kissinger–Akahira–Sunose (KAS) Method	317
Rejeb Hiba, Berrich Betouche Emna, and Chahbani Mohamed Hachemi	
Toxic Metal-Rich Extraction By-Product: Contamination Assessment and Reprocessing	323
J. Nouairi, W. Hajjaji, F. Rocha, S. Mefteh, and M. Medhioub	
Geoenvironmental Evaluation and Characterization of Near-Surface Subsoils for Sustainable Building Construction: An Integrated Approach	329
Kehinde D. Oyeyemi, Oluwarotimi M. Olofinnade, Ahzegbobor P. Aizebeokhai, Anthony N. Ede, Michael A. Oladunjoye, Oluseun A. Sanuade, Theophilus A. Adagunodo, Opeyemi Joshua, and David O. Nduka	
Solid Deposit Effects on the Pressure in Closed Pipes	335
Wahiba Mokrane	
Mechanical Characteristics of Tunnel Concrete Lining Made with Dredged Sediment Subjected to High Temperatures	341
Fatiha Kazi Aoual-Benslafa and Kawther Touhami	
Evaluation of the Mechanical and Environmental Properties of Self-Compacting Mortars with Raw Harbour Dredging Sediments (SCMs)	349
N. Philippe Ouedraogo, Frédéric Becquart, Mahfoud Benzerzour, and Nor-Edine Abriak	
Engineering Applications for Environmental Management: Air Pollution Control	
Evaluation of African Dust Events and Effect on PM₁₀ Concentration in Tunisia	359
Karim Bouchlaghem, Houda Chtioui, and Mohamed Hichem Gazzah	
Comparing Methodologies for Emission Estimation of Fugitive Methane in Landfills	367
Nizar Bel Hadj Ali and Tarek Abichou	
Compression Ratio Effect on the Performance and Emission of CI Engine Fueled with Waste Cooking Oil Methyl Ester and Diesel Blends at Constant RPM	373
Jeewan Vachan Tirkey, S. K. Shukla, and Amar Kumar Singh	

Contribution of the Spatio-temporal Evolution of Reduced Electric Field on the Conversion of Nitrogen Oxides	383
Abdel Karim Ferouani, Fatiha Lassouani, Chawki Ougherb, Souhila Askri, and Mostefa Lemerini	
A Regional Perspective of Environmental Impact Assessment Research: A Bibliometric Mapping and Visualization	389
Shaher Zyoud	
Feasibility of Integrating (PV/T) Solar Collector in Tunisian Households to Cover Thermal and Electric Building Needs Based on Sustainable Solar Energy	397
Majdi Hazami	
Study of a Solar CombiSystem (SCS) Producing Thermal and Electric Energies in Tunisian Households	403
Majdi Hazami, Farah Mehdaoui, and AmenAllah Guizani	
Determination of Wood Emissivity Using Active Infrared Thermography	409
Rui Pitarma and João Crisóstomo	
Comparison Between Ventilation, Recirculation, and Duncle Cycles of Desiccant Cooling System in the Hot and Dry Weather of Gabes	415
Sarrah Belguith, Zina Meddeb, Romdhan Ben Slama, and Bechir Chaouachi	
Process Control, Simulations and Intensification for Environmental Management	
Enhanced Cyclohexane Oxidation Activity and Selectivity on New Supported Transition Metal Catalysts Based on Co and Ag	425
Ritha Soulimane, Khaira Tafiani, Nawel Ameer, Redouane Bachir, and Sumeya Bedrane	
Synthesis, Characterization, and Application in Liquid Phase Organic Oxidation of LaFe_{1-x}Co_xO₃ Nanoparticles	429
Imen Jaouali, Noomen Moussa, Mohamed Faouzi Nsib, Miguel Angel Centeno, and Ammar Houas	
Effect of Urea–Hydrogen Peroxide Content on the Photocatalytic Activity of Zinc Oxide Nanoparticles	435
Karima Ayeub, Noomen Moussa, Giuseppe Marci, Elisa Garcia-Lopez, and Mohamed Faouzi Nsib	
Enhancement of the Compatibility Between Natural Rubber and Pineapple Leaf Microfibers for Better Stress Transfer in Their Composite.	441
Budsaraporn Surajarusarn, Nuttapong Hariwongsanupab, Gautier Schrodj, Samar Garreau, Karine Mougine, and Taweechai Amornsakchai	

Potential Applications of Zeolite Membranes	447
C. Algieri	
Extraction and Use of Lignin for Membrane Properties Modification	453
Adel Zrelli, Walid Elfalleh, and Achraf Ghorbal	
Optimized Functionalization of Industrial Waste for Oil Spill Remediation	459
Sebastiano Candamano, Angelo Mazza, Fortunato Crea, and Sudip Chakraborty	
Successful Use of Response Surface Methodology to Enhance the Degradation Efficiency of a Water Pollutant of Emerging Concern	465
Andrei-Ionuț Simion, Raluca Maria Hlihor, and Lidia Favier	
Oriented Membrane Processes for Selective Separation and Recovery of Direct Red 80 and Methylene Blue Dyes from Textile Wastewater	471
I. Mourtah, Z. Habibi, Y. Chaouqi, T. Eljaddi, N. Sefiani, L. Lebrun, and Miloudi Hlaïbi	
Adsorption of Dyes from Aqueous Solutions onto Multi-functional PPy/CS Exfoliated Nanohybrid for Fashionable Layered Polymer Nanocomposites	479
Nehal A. Salahuddin, Hosny A. EL-Daly, Rehab G. El Sharkawy, and Beshoy T. Nasr	
Application of Risk Analysis to Improve Environmental Sustainability of Water in Construction Sites	487
Francesca Fornasari, Matteo Bo, Francesco Formisano, Federica Pognant, and Marina Clerico	
The Concrete Degradation Caused by Ammonium Chloride Present in Coke Wastewater	493
Barbara Słomka-Słupik	
Ternary Phase Equilibrium Data for Water/Acetic Acid/Solvent (n-Hexane, n-Heptane) Systems	499
Nadjet Boulkroune, Abdeslam Hassen Meniai, Soumaya Larous, and Abdelhafid Talhi	
Quality of Prediction for Spatiotemporal Covariance Models	505
Helmut Waldl	
Thermodynamic Analysis and Simulation of the Absorption Refrigeration System	511
Nihel Ben Zid, Nejib Hajji, and Mohammed El Ganaoui	

Behind the Mechanism of Chromium (VI) Removal and Reduction from Aqueous Solutions by Fungal Biomass Using a Bio-Inspired Process Modelling and Optimization	517
Raluca Maria Hlihor, Elena Niculina Drăgoi, Mariana Diaconu, Lidia Favier, Silvia Curteanu, and Maria Gavrilescu	
Assessment of Groundwater Vulnerability to Pollutants by Electrical Resistivity Tomography at Mateur Plain, Northeastern Tunisia: Preliminary Result	523
Chadia Riahi, Mohamed Khaled Bouzid, Romdhan Haddad, Adel Klai, and Kamel Regaya	
Modelling Approach of the Biogeochemical Cycle on the Moroccan Shallow Reservoir	529
Karima Khalil, Hanane Rhomad, Wafae Belokda, Hiba Ahdour, Zainab Damsiri, and Khalid Elkalay	
Assessment of Management Practices Impact on the Water Quality of the Béja River Watershed Using SWAT Model	535
Dorsaf Ben Othman, Mohamed Fadhel Megdiche, and Moncef Gueddari	
Ecotoxicology, Environmental Safety and Bioremediation:	
Ecotoxicology	
Heavy Metals in Estuarine Sediments: Chemical Bioavailability and Toxicity Assessment	547
Sofia E. Koukina and Nikolay V. Lobus	
Ecological Risk Assessment of Trace Metal Pollution in an Urban Agricultural Area of Yaoundé (Cameroon)	553
Amina Aboubakar, Ahmed Douaik, Yvette Clarisse Mfopou Mewouo, Raymond Charly Birang A. Madong, Abdelmalek Dahchour, and Souad El Hajjaji	
Phytotoxicity of Copper and Zinc in Tomato Plants (<i>Lycopersicon Esculentum</i>. Mill): Impact on Growth and Mineral Nutrition	559
Abdelhafidh Hemeir, Ali Masmoudi, and Houcine Abdelhakim Reguieg Yssaad	
Persistence and Differential Survival of Fecal Indicator Bacteria in Boukourdane Waters	567
Siham Arab, Somia Hamil, and Abdeslam Arab	
Bioaccumulation Assessment of Trace Metals by Three Main Demersal Fish from Algerian Coast	573
Inal Ahmed, Belkacem Yasmina, Benfares Redouane, Rouidi Samir, Bachouche Samir, and Boulahdid Mostefa	

Ecotoxicological Requirements and Test Methods for the Evaluation of Wastes	581
Jörg Römcke	
Histopathological Changes in the Hepatopancreas of <i>Porcellio Laevis</i> (Crustacea, Isopoda) After Exposure to Cd and Zn Mixture	587
Chedliya Ghemari, Raja Jelassi, Hajer Khemaissia, Christophe Waterlot, Maryline Raimond, Catherine Souty-Grosset, Francis Douay, and Karima Nasri-Ammar	
Responses of <i>Orchestia Montagu</i> (Amphipoda, Talitridae) to Copper and Zinc Mixture	593
Raja Jelassi, Hajer Khemaissia, Chedliya Ghemari, Maryline Raimond, Catherine Souty-Grosset, and Karima Nasri-Ammar	
Pollution-Related Decrease in the T-Cell Immune Response in a Wild Bird Species	599
Ayadi Tasnim, Hammouda Abdessalem, and Selmi Slaheddine	
Phytotoxic Effect of Pollution on Young Olive Trees (<i>Olea europaea</i> L.)	605
Dhouha Frikha and Béchir Ben Rouina	
Characterization and Ecotoxicological Assessment of Polycyclic Aromatic Hydrocarbons in Soils from the Niger Delta, Nigeria	611
Mutiu Adesina Adeleye, Ohiro Oziegbe, and Ouadadi Senouci	
Acute and Sub-Lethal Toxicity of Aluminum on Developing Zebrafish Embryos	617
Evangelia Gouva, Cosmas Nathanailides, Ioannis Paschos, Fotini Athanassopoulou, and Ioannis S. Pappas	
Mitochondria Dysfunction on Striatum After a Chronic Exposure to Pesticides Mixture in Rats	623
Salim Gasmi, Brahim Ben Aicha, Rachid Rouabhi, Samira Boussekine, and Mohamed Kebieche	
Comparative Growth of Cereal Species Under Lead Stress	629
Hana Souahi, Zina Gassarellil, Ahlem Gharbi, and Leila Meksem Amara	
Ecotoxicology, Environmental Safety and Bioremediation:	
Environmental Safety	
Heavy Metals Spatial Distribution in Seawater, Suspended Particulate Matter, and Sediments in Gabes Gulf (Tunisia)	637
Dorra Gargouri, Annabi-Trabelsi Neila, Qusaie Karam, and Habib Ayadi	

Storage Facilities Reclamation Using Dredged Sediments from Waterways: Growing Media Formulation for Plants According to E.U ECOLABEL Framework 643
 Marie Lemay, Yannick Mamindy-Pajany, Nor-Edine Abriak, Afef Zouch, and Mohamed Ksibi

The Use of *Armadillo Officinalis Duméril, 1816 (Crustacea, Isopoda)* as a Tool for Trace Element Contamination Assessment 649
 Hajer Khemaissia, Raja Jelassi, Chedliya Ghemari, Maryline Raimond, Catherine Souty-Grosset, and Karima Nasri-Ammar

Assessment of Heavy Metals in Water from Lake Kivu, Rwanda 655
 Alliance Nyiragatare, Valens Habimana, Tite Migabo, Dieudonne Mutangana, Theoneste Muhizi, and Antoine Nsabimana

Investigation of Man-Caused Contaminated Sites in the Arctic Region 661
 Anastasiia Karnaeva, Olga Kulikova, Elena Mazlova, and Aleksey Buryak

The Mussel *Mytilus Galloprovincialis*: Nutritional Quality and Bioindicator of Availability of Radionuclides in the Marine Environment (Algerian Basin) 665
 Yassine Guendouzi, Dina Lila Soualili, Mostefa Boulahdid, Nabila Eddalia, Meriem Boudjenoun, and Abdelkader Nouredine

Sea Farms as a Safe and Sustainable Food Source: An Investigation on Use of Seaweeds for Liver Detoxification and Reduced DNA Damage in *Lates Calcarifer* (Bloch, 1790) 671
 Oladokun Sulaiman Olanrewaju, Anna De Maio, Eva Lionetti, Anna Rita Bianchi, Dea Rabbito, Andrea Ariano, Fatima-Zahra Majdoubi, and Giulia Guerriero

Honeybees as Bioindicators in Environmental Monitoring: Practical Applications and Open Online Course 677
 Luca Bolelli, Elida Nora Ferri, Stefano Sangiorgi, Claudio Porrini, Luca Ferrari, Marco Nenzioni, Roberto Colombo, Severino Ghini, and Stefano Girotti

Ecotoxicology, Environmental Safety and Bioremediation: Bioremediation

Praseodymium Recovery from Aqueous Solutions with a Low-Cost *Fucus vesiculosus* Algal-Based Material 685
 H. Demey and T. Mhadhbi

Elimination of Pollutants from Industrial Wastewater by Phytoremediation 691
 Sarra Badache, Nora Seghairi, and Naouel guerrouf

Plant Growth Promoting and Heavy Metal-Tolerant Rhizobia from Algeria	697
Mouloud Ghadbane, Laid Benderradji, Samir Medjekal, Hani Belhadj, and Harzallah Daoud	
Assessment of Arbuscular Mycorrhizal Fungi Status and Rhizobium on Date Palm (<i>Phoenix dactylifera</i> L.) Cultivated in a Pb Contaminated Soil	703
Mouloud Ghadbane, Samir Medjekal, Laid Benderradji, Hani Belhadj, and Harzallah Daoud	
Larvicidal Activity of Lamiaceae and Lauraceae Essential Oils and Their Effects on Enzyme Activities of <i>Culex pipiens</i> L. (Diptera: Culicidae)	709
Fouzia Tine-Djebbar, Djemaa Dris, Radja Guenez, Samir Tine, and Noureddine Soltani	
Applicability of Surfactant-Enhanced Remediation in Arctic Conditions	717
Olga Kulikova, Elena Mazlova, Tatiana Smirnova, and Anastasiia Karnaeva	
The Study of Biotransformation Products and Microbiological Activity of Antibacterial Drugs In Vivo	723
Nailya Ibragimova, Marina Lyu, Aitugan Sabitov, Saltanat Jumabayeva, and Roza Karzhaubayeva	
A Novel Drug Delivery System for Amphotericin B to Treat Cutaneous Leishmaniasis	729
Nour Elhouda Benammar and Ahmed Hichem Hamzaoui	
Native Bacteria from Djebel Onk Mine (Algeria) Exhibit Selective Adhesion onto Phosphate Ore	735
Hakim Rabia, Malek Ould Hamou, Katarzyna Kasperkiewicz, Izabela Potocka, and Maria Augustyniak	
Biotechnology for Environmental Management: Removal of Environmental Pollutants by Biological Processes	
Expression of Mutated <i>SapB-N99Y</i> Keratinase in <i>Bacillus subtilis</i> DB430 and Its Attractive Properties for Soaking Hides and Skins in the Leather Processing Industry	743
Nadia Zaraï Jaouadi, Mouna Sahnoun, Hatem Rekik, Mouna Ben Elhoul, Haifa Khemir Ezzine, Neila Miled, Samir Bejar, and Bassem Jaouadi	
Production and Characterization of <i>Komagataeibacter xylinus</i> SGP8 Nanocellulose for Its Application in the Removal of Cd Ions	751
Amrik Bhattacharya, Ayesha Sadaf, R. P. Singh, and S. K. Khare	

Optimization of Pectin Extraction from Orange Peels and Its Anti-proliferative Potential on HEp2 Cancer Cells	757
Hadjira Hamai-Amara, Khalida Abdoun-Ouallouche, Assia Nacer-khodja, Karima Abdelhafid, Abdelouafi Benmouloud, and Assia Djefal-Kerrar	
Extraction and Valorization of Sericin for Textile Treatments	765
Imene Belhaj Khalifa and Néji Ladhari	
Biotechnological Properties of New Microbial Peroxidases for Lignin and Humic Acid Biodegradation and Biodeterioration	771
Bassem Jaouadi, Khelifa Bouacem, Hatem Rekik, Nadia Zaraï Jaouadi, Samir Bejar, Rachid Annane, Abdelmalek Badis, and Amel Bouanane-Darenfed	
Comparative Study of Cooked and Uncooked Food Waste Co-composting with Green Waste and Sewage Sludge: A Case Study of Tunisia	777
Nour El Houda Chaher, Mehrez Chakchouk, HadeF Redjem, Abdallah Nassour, Michael Nelles, and Moktar Hamdi	
Nitrogen Removal from Ink-Jet Textile Printing Wastewater by Autotrophic Biological Process: First Results at Lab and Pilot Scale	783
Giacomo Bellandi, Roberto Di Cosmo, Andrea Turolla, Micol Bellucci, Simone Visigalli, Glauco Menin, Martina Bargna, Giovanni Bergna, and Roberto Canziani	
A Novel Approach for Stabilizing Heavy Metals in Municipal Solid Waste Incineration (MSWI) Fly Ash Using Waste Fishbone Hydroxyapatite (FB-HAP)	789
Amirhomayoun Saffarzadeh, Mitali Nag, Takeshi Nomichi, Takayuki Shimaoka, Hirofumi Nakayama, and Teppei Komiya	
Preparation of Iron-Loaded Maritime Pine Tannin Resins for Arsenic Uptake from Water	795
Hugo Alexandre Mendes Bacelo, Cidália Maria de Sousa Botelho, and Sílvia Cristina Rodrigues dos Santos	
Biotechnology for Environmental Management: Bio-Adsorption Process	
Removal of Phenol from Aqueous Solution by Coupling Alternating Current with Biosorption	803
Amina Othmani, Aida Kesraoui, and Mongi Seffen	
Novel Biosorbents from Tunisian Date Palm “Bouhattam” Seeds for Copper(II) Ion Adsorption	809
Najeh Maaloul, Paula Oulego, Manuel Rendueles, Achraf Ghorbal, and Mario Díaz	

Adsorption of Anionic Surfactant on <i>Phragmites Australis</i>: Pretreatment and Reaction Mechanisms	815
Rania Dallel, Rochdi Baati, and Mongi Seffen	
Treatment of Direct Yellow 106 by Fenton Process Using Taguchi Method	821
Nabila Boucherit, Mahmoud Abouseoud, Mohamed Barki, and Lydia Adour	
Oriented Membrane Processes for the Treatment and Recovery of Vanadium Ions from Industrial Acidic Solutions	827
Imane Touarssi, Y. Chaouqi, I. Mourtah, T. El Jaddi, Sanaa Majid, L. Lebrun, and M. Hlaïbi	
Mg and Cd Biosorption by Native Bacteria From Djebel Onk Mine (Algeria)	835
Hakim Rabia, Malek Ould Hamou, Katarzyna Kasperkiewicz, Magdalena Skowronek, and Maria Augustyniak	
An Eco-Friendly Alternative Biosorption of Heavy Metal Removal from Industrial Wastewater: Characterization and Application	841
Zied Marzougui, Mohamed Damak, Leila Chaari, Sana Ghrab, and Boubaker Elleuch	
Removal of Hexavalent Chromium by <i>Pleurotus Mutilus</i> Biomass in Aqueous Solution	847
Ali Alouache, Ammar Selatnia, and Boubekeur Nadjemi	
Effective Removal of Heavy Metal Ions from Wastewater Using a New Magnetic PolyHIPE Monoliths	853
Zakaria Mokadem, Salima Saidi-Besbes, Geraldine Agusti, and Abdelhamid Elaissari	
Synthesis of Polyaniline/Pectin Biocomposite and Its Efficiency as Adsorbent for Methylene Blue Removal	859
Souad Djellali, Amani Touati, Maya Kebaili, and Rachid Sahraoui	
Biotechnology for Environmental Management: Drug Residues Control and Microbial-Contamination Surveillance	
Extraction of Drug Residuals from an Aqueous Solution Using Nanocellulose Adsorbent	867
Yasmin Thaher, Shehdeh Jodeh, and Othman Hamed	
The Treatment of Wastewater According to the Oriented Membrane Processes for the Extraction and Recovery of the Norfloxacin Compound	873
Rkia Louafy, Sanae Tarhouchi, H. Mouadili, O. Kamal, K. Touaj, L. Lebrun, and M. Hlaïbi	

Extraction Behaviors for Inorganic Arsenic Removal from Seaweed (*Gracilaria Fisheri*) Using Food Additives 881
 Charuwan Khamkaew

Detection of Hepatovirus a in Two Tunisian Wastewater Treatment Plants 887
 Chourouk Ibrahim, Salah Hammami, and Abdennaceur Hassen

Performance of Laboratory Scale up-Flow Constructed Wetlands for Tertiary Wastewater Treatment 897
 Narimen Baccari, Mona Lamine, and Moncef Khadraoui

Oriented Membrane Processes for the Treatment of Wastewater from the Pharmaceutical Industry Loaded with Paracetamol Compound 901
 Sanae Tarhouchi, Rkia Louafy, E. H. Atmani, K. Touaj, L. Lebrun, and M. Hlaïbi

Reversibility Effects of Salinity Stress in *Lepidium Sativum*: Growth, Resistance State, and Management 909
 Chiraz Chaffei-Haouari, Hajer Bechedly, Tarek Slatni, and Houda Gouia

Climate-Change-Related Effects on the Environment and Ecological Systems

Comparison of the Atmospheric Attenuation of the Equatorial and Temperate Zones 917
 Abdelmoula Ben-tayeb, Mohammed Diouri, and Hanae Steli

Annual Precipitation Variability in Semi-Arid Area: The Wadi Cheliff Case Study, Algeria 923
 Mohammed Achite and Tommaso Caloiere

Estimation of the Mid and Late Century Extreme Summer Winds Over the Eastern Mediterranean from EURO-CORDEX Models 929
 Stella Dafka, Andrea Toreti, Prodromos Zanis, Elena Xoplaki, and Jeurg Luterbacher

Evaluating Satellite-Derived Evapotranspiration Trends: A Case Study of the Marksovsky District of the Saratov Region (RF) 935
 Olga Ermolaeva, Anatoly Zeyliger, Liubov Molchanova, and Yujiu Xiong

Spatiotemporal Variability of Rainfall and Temperature for the Dhidhessa River Basin (Ethiopia) 941
 Gizachew Kabite Wedajo, Misgana Kebede Muleta, Berhan Gessesse, and Sifan Abera Koriche

Contribution to the Understanding of Rainfalls Occurring in Buenos Aires City (Argentina) Between 1960 and 2018 949
 Marcelo L. Morales-Yokobori

Effect of Physical Parameters on the Transparency of Ichkeul Lake's Waters, North–East of Tunisia	957
Hajer Ouni, Mitsuteru Irie, Nabih Ben M'barek, Jamila Tarhouni, Nejl Tlatli-Hariga, and João Miguel Dias	
Mapping of the Vulnerability to Pollution of El Oued Shallow Aquifer in the Algerian Sahara	963
Boualem Bouselsal and Mohammed Ouarekh	
The Impact of Climate Change on the Hydrological Characteristics and Water Availability of the Pamir Mountainrivers	971
Parviz Normatov, Rano Eshankulova, Inom Normatov, and Qodirjon Odinaev	
Influence of Tillage Systems on Soil Bulk Density and Carbon Dioxide Emissions in the Mediterranean Context	977
Roua Amami, Khaled Ibrahim, Abdelhamid Znouda, Khaoula Abrougui, and Chehaibi Sayed	
Simulation of Desiccation Cracking in Clayey Soil Using FEM–MPM Coupling Method	985
Jihen Feki, Houcem Trabelsi, and Sami Montassar	
Elevated Temperature Affects Biochemical Responses and Oil Quality in Olive Trees (<i>Olea europaea</i> L., cv Chetoui)	991
Yemine Ben Rouina, Mohamed Zouari, Nacim Zouari, Béchir Ben Rouina, and Mohamed Bouaziz	
Drought Disturbance from Climate Change: Response of Cork Oak (<i>Quercus Suber</i> L.) Forests in North Africa (Tunisia)	997
Issam Touhami, Hassane Moutahir, Juan Bellot, Touhami Rzigui, Hamdi Aouinti, Ali Khorchani, Mohamed Tahar Elaieb, Abdelhamid Khaldi, and Zouheir Nasr	
Change Detection Analysis of Vegetation Cover in the Middle Modder River Catchment (South Africa): Implications for Climate Variability	1003
Saheed Oke and Silent Ruzvidzo	
Novel Aspects for Accounting and Monitoring Carbon Sequestration of Tree Crops in the Mediterranean; Environmental and Economic Benefits	1009
Kostas Bithas, Antonios Kolimenakis, and Angelos Mimis	
Climate Change Adaptation and Resilience for Tunisian Farmers in Semi-arid Regions	1013
Jamel Ben Nasr, Hatem Chaar, and Fadoua Bouchiba	

Non-use Value of Forest Ecosystem Services in Russia 1019
 Ekaterina Li

Impact of Weather Parameters on Abundance of *Liriomyza Cicerina* (Agromyzidae) in the Northwest of Tunisia 1023
 Abir Soltani, Moez Amri, Antonio Carapelli, and Jouda Mediouni Ben Jemâa

The *Amphistegina* Invasion in the Monastir Bay, Tunisia 1029
 Mohamed Damak, Manel Ben Ismail, Rania Fourati, and Monem Kallel

Population Structure and Body Size of the Sahara Blue-Eyed Pond Turtle *Mauremys leprosa saharica*, from an Isolated Pond in Southern Morocco 1033
 Soumia Loulida, Mohammed Znari, Mohamed Naimi, and Safaa Bendami

Spatio-Temporal Structure of Rotifers Assemblages in a Lacustrine Ecosystem, Northern Algeria, a STATICO Analysis 1039
 Somia Hamil, Siham Arab, Ismahane Adaouri, Ikram Nasrouche, Amin Chaffai, Mounia Baha, and Abdeslem Arab

Abrupt and Sustained Acidification in Southern Tethyan Margin During the Paleocene–Eocene Thermal Maximum: Impacts on Foraminifera 1045
 Noura Kotti, Besma Mardassi, Ignacio Arenillas, and Jamel Abdennaceur Ouali

Ecosystem Disturbance Records During the Uppermost Maastrichtian-Lower Danian in Southern Tethyan Realms (Gafsa Basin, Tamerza Area, Tunisia) 1051
 Salma Jmal, Noura Kotti, and Besma Mardassi

Implementation of the Climate Agreement in the Russian Oil and Gas Sector 1057
 Elena Mazlova, Tatiana Smirnova, Olga Kulikova, and Yana Blinovskaya

Role of Environmental Variables on the Distribution of the Burmese Python in Florida 1063
 Zella A. Conyers and Shouraseni Sen Roy

Natural Resources, Agriculture and the Environment: Agricultural Activities and Resources: Land Use, Impacts, Yield and Sustainability

Humic Substances for Agricultural Applications: Properties and Challenges 1073
 Maris Klavins, Arturs Viksna, Maris Bertins, Janis Krumins, and Karina Upska

Agricultural and Forest Land Use Changes in Poland Within 2003–2017	1079
Agnieszka Peška-Siwik	
Assessment of the Sensitivity of Some Fusarium Root Rot Agents to 6-Demethyl Mevinolin, a Putative Biosensitizer	1085
Maxim Kartashov, Tatyana Pasechnik, Natalia Statsyuk, Larisa Shcherbakova, and Vitaly Dzhavakhiya	
Evolution of Nitrogen and Phosphorus in Tunisian Agricultural Soil Under Controlled Conditions	1091
Manel Allani, Hatem Ibrahim, and Abdessatar Hatira	
Olive Mill Wastes in the Mediterranean: An Initial Assessment of Organic Matter and Nutrients of Agricultural Value	1097
Evan Marks, Hanene Akrouf, Vasiliki Kinigopoulou, Charalampos Doulgeris, Salah Jellali, Carlos Rad, Paula Sánchez Zulueta, Evangelos Tziritis, Leila El-Bassi, and Mejdi Jeguirim	
Pollinator Impact on the Sterolic and the Triterpenic Dialcohol Composition of Virgin Olive Oils (VOOs) from Southern Tunisia Autochthonous Varieties	1103
Imen Oueslati, Hédia Manai-Djebali, Fawzia Mahjoub Haddeda, Jacinto Sánchez-Casasc, and Xavier Fernandez	
Importance of Phytosterols in the Classification of Tunisian Olive Cultivars: Discrimination Between Varieties, Hybrids and Oleasters	1109
Hédia Manai-Djebali, Imen Oueslati, Béchir Baccouri, Zina Harzalli, Manuel A. Martínez-Cañas, and Jacinto Sánchez-Casas	
Behavior of the Chemical Composition of the Refined, Blended, and Extra Virgin Olive Oils During the Heating Process	1115
Imen Oueslati and Hédia Manai-Djebali	
Olive Mill Solid Wastes: From Wastes to Biofertilizer	1121
Lobna Bargougui, Mohamed Chaieb, and Ali Mekki	
Supporting the Value Chain of Extra Virgin Olive Oil: About the Reuse for Nutritional Purposes of Wet Olive Pomace	1127
Giuseppe Russo, Simona Proietti, Stefano Moscatello, Marco Lauteri, and Andrea Pisanelli	
Long-Term Olive Mill Wastewater Applications on Various Crops Can Improve Productivity	1133
Salwa Magdich, Béchir Ben Rouina, and Emna Ammar	

Socioecological Insights on the Sustainability of the Sweet Cherry Production Chain Within the Frame of a Lebanese Small Farming System	1139
Giuseppe Russo, Stephanie A. Rahme, Fabio Ammar, Carlo Simonetti, and Marco Lauteri	
Feasibility of Crop Production Using Greenhouse Fed by Desalination: A Review (MENA Regions)	1145
Hassan Awaad, Abdelazim Negm, Hassan Fath, and Akbar Javadi	
Effects of Regulated Deficit Irrigation (RDI) Applied at Different Growth Stages of Greenhouse Tomato on Yield and Fruit Quality	1153
Amal Ghannem, Imed Ben Aissa, and Rajouene Majdoub	
Tomato Growth Promotion Induced by <i>Meyerozyma Guilliermondii</i> Strain INAT (KU710283) in Controlled Conditions	1159
Zayneb Kthiri, Maissa Ben Jabeur, and Walid Hamada	
Durum Wheat (<i>Triticum Durum</i>) Sprouts Hygienic Quality at Different Temperature and the Role of Zinc on Improving Microbial Properties	1165
Sarra Jribi, Helga Molnàr, Otilia Tamara Antal, Nóra Adányi, Oussema Kheriji, Zoltan Naár, and Hajer Debbabi	
The Contribution of the Costs of Agricultural Inputs (to) Wheat Grain Yield: Morocco as a Case Study	1169
Hayat Lionboui, Tarik Benabdelouahab, Fouad Elame, Abdelghani Boudhar, Adil Salhi, and Rachid Hadria	
Quinoa Rehamna Project: High-Yielding Quinoa Cultivars Introduction	1175
Abdelaziz Hirich, Redouane Choukr-Allah, Mohamed El Gharouss, Sifeddine Rafik, Juan Pablo Rodriguez Calle, Manal Mhada, Khalil El Mejahed, Fatima Azaykou, and Kaouatr Filali	
Quinoa Value Chain and Marketing Assessment in Morocco	1181
Abdelaziz Hirich, Meriem Chaoui, Yassin Assabban, Salima Jazi, Redouane Choukr-Allah, Mohamed El Gharouss, Sifeddine Rafik, and Manal Mhada	
Tunisian Durum Wheat Varieties: Influence of Geographical Origin	1187
Hédia Manai-Djebali, Béchir Baccouri, Imen Oueslati, Zina Harzalli, and Abdelwahed Ghorbel	

Integrated Soil Fertility Management to Address Food Security and Enhance Forest Ecosystems Sustainability in “Trois Rivières” Forest Reserves (Benin, West Africa) 1193
 Romaric S. Lokossou, Gaston S. Akouèhou, Irénikatché P. B. Akponikpè, Romuald Davakan, Romain Glele Kakai, and Jean Ganglo

The Effect of Phosphorus Fertilization on Pepper Growth and Production Under Saline Conditions 1201
 Sara Attaoui, Mohammed Oulahraoui, Redouane Choukr-Allah, Mohamed Fallah, and Khalid Azim

MultispeQ for Tracing Biostimulants Effect on Growth Promoting and Water Stress Tolerance in Wheat 1207
 Maissa Ben-Jabeur, Adrian Gracia Romero, Ruben Vicente, Zayneb Kthiri, Shawn Carlisle Kefauver, Maria Dolores Serret, Jose Luis Araus Ortega, and Walid Hamada

The Effect of Irrigation Water’s Salinity on a Wheat Culture in the Presence of the Organic Matter 1213
 Affaf Masmoudi and Ali Masmoudi

How Peri-Urban Agriculture Can Contribute to the Sustainable Development of a Midsized City? The Case of Sahline (Tunisia) 1219
 Rawnek Slama, Christophe-Toussaint Soulard, and Hichem Rejeb

Monetary Evaluation as a Decision Support Tool for Environmental Assessment of Forest Natural Habitats 1225
 Ivo Machar and Vilem Pechanec

Agriculture and Land Stewardship: Can It Help Move from an Uncertain Present to a Sustainable Future 1231
 Katherine Ann Spanos

Natural Resources, Agriculture and the Environment: Soil Impacts and Environment

Soil Organic Matter Rate Inside the Jessours Soil in the Matmata Mountainous Region 1237
 Habib Lamourou, Nissaf Karbout, Zied Zriba, and Mohamed Moussa

Sandstone Soils of the Cedar Forests of the Aures (Algeria): Characteristics, Water Reserve, and Incidence on the Hydric Balance Assessment 1243
 Saliha Halitim and Amor Halitim

Land Degradation Assessment in the Dry Areas of Tunisia Case Study: Wadi Koutine Watershed 1249
 Mongi Ben Zaied, Mohamed Ouessar, Messaoud Guied, and Hedi Kerdi

Heavy Metal Contamination Degree of Soils Surrounding the Rehabilitated Dump of Oued Smar, Algeria 1255
 Nadjib Benosmane

Macro- and Micro-Nutrients Composition and Concentration in Al-Uja Soil Under a Date Palm Plantation, Palestine 1261
 Asmaa Abu-Hammad, Amer Marei, and Rezeq Salimia

Effect of Manure and Differing Sand Amendments on the Soil Chemical Properties of the Oases in Tunisia 1269
 Nissaf Karbout, Roland Bol, Rawan Mlih, Mohamed Moussa, Habib Lamoro, Nadhem brahim, and Habib Bousnina

Modelling of the Soil Organic Fraction in a Limestone Deposit Within a Mediterranean Environment 1275
 Hatem Ibrahim, Nadhem Brahim, Didier Blavet, and Marc Pansu

Measuring the Engineering Properties of Landfill Leachate-Contaminated Soil 1281
 Safia Khodary, Hassan Fath, Abdelazim Negm, and Ahmed Tawfik

Intensity of Chemical Weathering Over Three Meta-igneous Rocks: Importance for Trace Metals Enrichment in Soil Profiles 1287
 Saheed Oke

PGPR Traits of Rhizospheric *Nocardiopsis* Strains Isolated from Algerian Soils 1293
 Lamia Aouar, Inas Boukelloul, and Abderrahmane Benadjila

Control and Regeneration of Degraded Protected Forest Area Using Microbially Induced Calcite Precipitation: A Review 1301
 Amir Tophel and G. V. Ramana

Natural Resources, Agriculture and the Environment: Biodiversity and Ecological Systems: Impacts and Remediation

Assessing the Conservation Viability of the Easternmost Wetland of the Mancha Húmeda Biosphere Reserve (Spain) 1309
 África de la Hera-Portillo, Marco Filipe Callaú López, Julio López-Gutiérrez, and Teresa Orozco-Cuenca

Echophysiology of Camel Ovarian Functioning at Algerian Extreme Arid Conditions 1313
 Djallel Eddine Gherissi, Zoubir Bouzebda, Farida Bouzebda-Afri, Faycel Chacha, Ramzi Lamraoui, Amina Gherissi, and Abd Latif Miloudi

Linking Livestock Production and Wild Biodiversity: Contribution of Pastoral Production Systems to the Habitat of Bird Priority Conservation Species 1321
 Oscar Blumetto and Andrés Castagna

Insights into Nematode Biocontrol Potential Through Biological and Proteomics Analysis of the Fungus <i>Trichoderma viride</i>	1327
Lobna Hajji-Hedfi, Emna Ben Khaled, Suzana Cobacho Arcos, Lee Robertson, Sergio Ciordia, María Rosa Gonzalez, Najet Horrigue-Raouani, and Alfonso Navas	
Simulation of Phytomass Dynamics of Plant Communities Based on Artificial Neural Networks and NDVI	1335
Vladimir Mikhailov, Marija Ponomarenko, and Vladislav Sobolevsky	
<i>Padina pavonica</i> and <i>Jania rubens</i> Associated Bacteria: Biodiversity and Antibacterial Potential	1341
Amel Ismail, Leila Ktari, Mehboob Ahmed, Radhia Mraouna, Imen Hmani, Abdellatif Boudabous, and Monia Elbour	
Epidemiology of Pesticide Poisoning Among Children in Morocco	1347
Zakaria Abidli, Sara Jadda, Hinde Hami, Donia Kharbouch, Latifa Amiar, Abdelrhani Mokhtari, Naima Rhalem, and Rachida Soulaymani-Bencheikh	
Impact of Dietary Fibers on the Biochemical Markers of Bone Remodeling in Hemodialyzed Postmenopausal Women (Algeria)	1353
Fatima Mehenni, Boumediene Meddah, and Aicha Tir Touil Meddah	
First Report on the Copro-parasitology of Striped Hyena, African Golden Wolf and Red Fox in Chrea National Park, (Algeria)	1357
Djamel Bendjoudi, Faiza Marniche, Lilia Takdjout, and Manuel Epalanga	
The Earthworm Fauna of Chr�ea National Park (Algeria)	1363
Lahcen Zerrouki, Warda Essarhane, Somia Hamil, and Mounia Baha	
The Distribution of Soil Fauna in the Forest of Theniet El Had	1369
Mohamed Nadjib Benzohra, Soumia Hamil, and Mounia Baha	
MF3 Protein Encapsulation in Biodegradable Poly-3-Hydroxybutyrate Improves Its Protective Action Against a Major Wheat Pathogen <i>Parastagonospora Nodorum</i>	1373
Tatiana Voinova, Maxim Kartashov, Larisa Shcherbakova, Natalia Statsyuk, and Vitaly Dzhavakhiya	
Efficiency of Alkaloids Crude Extract of <i>Cinnamomum Zeylanicum</i> as Corrosion Inhibitor of Mild Steel in Sulfuric Acid Solution	1379
Souad Djellali, Hana Ferkous, Rachid Sahraoui, and Sara Meharga	
Chemical Analysis and Metal Chelating Power of Crude Extracts from Three Medicinal Plants: <i>Cistus creticus</i>, <i>Cinnamomum zeylanicum</i>, and <i>Rosmarinus officinalis</i>	1385
Souad Djellali and Rachid Sahraoui	

Comparing Chemical Composition and Phenolic Compounds of Some Herbals as Potential Feed Additives in Ruminant Nutrition	1389
Samir Medjekal, Mouloud Ghabbane, Souhil Boufennara, Laid Benderradji, Raul Bodas, Hacène Bousseboua, and Secundino López	
Valorization of Agave Americana Fibers in the Preparation of Activated Carbon and Removal of Dyes from Aqueous Solutions	1395
Taher Selmi, Ghizlane Enaime, Aïda Kesraoui, Abdelaziz Baçaoui, and Mongi Seffen	
In Vitro Multiple Solution Extracts from Leaves of <i>Artemisia judaica</i> L. Var. <i>Sahariensis</i> (L. Chevall.) Collected from the Algerian Sahara and Its Antimicrobial Activities Against Pathogenic Microorganisms	1401
Laid Benderradji, Mouloud Ghabbane, Noura Messaoudi, and Lydia Elhadeif El Okki	
Pomegranate Peel Powder as a Green Eco-Friendly Corrosion Inhibitor for Steel rebar's Embedded in Cement Paste	1407
Imen Assadi, Marwa Trimeche, Walid Elfalleh, Aymen Amine Assadi, Ali Ferchichi, and Naceur Etteyeb	
Controlling the Porosity and Strength of Liquefied Spruce Tree Sawdust Based Carbon Foams via Changing Surfactant Amount	1413
Adife Seyda Yargic and Nurgul Ozbay	
What's Left of the Pear Tree After the Fire Blight Outbreak? An Urgent Need for Germplasm Preservation	1419
Mehdi Trad	
Some Biochemical Changes in the Lichen <i>Evernia prunastri</i> Exposed to Atmospheric Pollutants	1425
Gordana Bogdanović-Dušanović, Nedeljko Manojlović, Radmila Trajković, Dragoslav Pejčinović, and Jovica Tomović	
Situation and Environmental Impacts of Phytosanitary Treatments for Greenhouse Vegetable Crops in the Region of Biskra (ALGERIA)	1431
Toufik Aidat and Salah Eddine Benziouche	
Mediterranean Seaweeds as Source of Bioactive Compounds: Case Study of Some Red Algae (Rhodophyta) from North Coast of Tunisia	1437
Imen Hmani, Leila Ktari, Amel Ismail, Cheima M'dallel, and Monia El Bour	

Effect of Incorporating Natural Sweeteners in Jams on Appetite, Palatability and Consumers' Acceptance	1445
May Ouhaibi, Sarra Jribi, and Hajer Debbabi	
Disperse Blue 1 Removal Using Three Formulations of Cactus Extracts: A Comparative Study with a Chemical Flocculant	1451
Bouthaina Othmani and Moncef Khadhraoui	
Activated Carbon from Prickly Pear Seeds: Optimization of Preparation Conditions and Cadmium Removal Using Experimental Design Approach	1457
Rimene Dhahri, Asma Bouzidi, and Younes Moussaoui	
Synthesis and Application of Algerian Natural Kaolin Modified 13X Zeolite for the Treatment of Real Textile Effluent	1463
Asma Dhiffalah, Fatima Zohra EL Berrichi, Nor el Houda Fardjaoui, Ibtissem Slatni, Ammar Maoui, Brahim Gasmi, Joelle Duplay, and Malika Ghazi	
2-(2-Methoxybenzylidene) Hydrazine-1-Carbothioamide as Efficient Organic Inhibitor for Mild Steel in Hydrochloric Acid Solution	1473
Hana Ferkous, Souad Djellali, Rachid Sahraoui, Hamza Behloul, Khaoula Saoud, and Alaaddin Çukurovali	
Thermodynamic and Electrochemical Studies of Corrosion Inhibition of Carbon Steel by <i>Rosmarinus Officinalis</i> Extract in Acid Medium	1479
Amina Belakhdar, Hana Ferkous, Souad Djellali, Hana Lahbib, and Yasser Ben Amor	
TiO₂ Supported on Clay–Cement Hybrid Materials and Wood Fibers as Photocatalyst for Phenol Photodegradation	1485
Latifa Morjène, Minoo Tasbihi, Michael Schwarze, Fadhel Aloulou, and Mongi Seffen	
Chemical Composition and Activity of <i>Lavandula Angustifolia</i> Essential Oil Against Stored-Product Pest <i>Rhyzopertha Dominica</i> (F.) (Coleoptera: Bostrichidae): Fumigant Toxicity, Food Intake and Digestive Enzymes	1491
Samir Tine, Nardjess Sayada, Fouzia Tine-Djebbar, and Noureddine Soltani	
Efficient Conversion of Rapeseed Cake into Bio-Alcohol Through Pyrolysis	1501
Elif Yaman, Nurgül Özbay, Sinan Temel, and Fatma Özge Gökmen	
Inspection of Trees Using Infrared Thermography	1507
Rui Pitarma and João Crisóstomo	

Pollution and Physiological Changes in the Leaves of Apricot Plants	1513
Mohamed Zouari, Nada Elloumi, Monem Kallel, and Béchir Ben Rouina	
Infrared Thermography Applied to Trees: Short Review	1517
Daniele Vidal and Rui Pitarma	
Natural Resources, Agriculture and the Environment: Environmental Sustainable Water Systems and Impacts	
Survey of Seawater in the Coastal Area of the Black Sea in Front of Cape Galata (Bulgaria)	1525
Slava Dineva	
Varna Bay (Bulgaria): Research Based on Water-Related Challenges	1531
Slava Dineva	
Water Balance Estimation in Semiarid Mediterranean Watersheds Using SWAT Model	1537
Yassine Bouslihim, Aicha Rochdi, and Namira El Amrani Pazza	
Participatory Management of Irrigation Water in Morocco: Lessons from a Case Study in Souss-Massa Region	1545
El Houssaine Erraoui and Hanane Azemzi	
Application of CCME-WQI and Trend Analysis for Water Quality Assessment of the largest Dam in Algeria	1553
Ahmed Amin Soltani, Abdelmalek Bermad, Hamouda Boutaghane, and Mahmoud Hasbaia	
Assessment of the Surface Water Quality of Kebir–Rhumel Catchment Area Through Physico–Chemical and Biological Analysis	1559
Imane Saal, Djaouida Bouchelouche, Mouna Hafiane, Ceria Hamache, and Abdeslem Arab	
The Trophic Status of the Bakhadda Dam Lake Using Physicochemical Analysis and Trophic Index	1565
Ghiles Smaoune, Djaouida Bouchelouche, Nassima Doukhandji, and Abdeslem Arab	
Multivariate Statistical Techniques to Evaluate Spatial Variations in Water Quality Case Study: West-Central Algeria	1571
Ismahane Adaouri, Somia Hamil, Siham Arab, Djaouida Bouchelouche, Amin Chaffai, Ikram Nasrouche, Safia Akli-Bidi, and Abdeslem Arab	

Effect of Magnetic Treatment of Irrigation Water on Spinach Matador (*Spinacia Oleracea* L) Growth and Soil Characteristics 1579
 Hsan Youssef Mehdaoui, Nadia Castanheira, Manuela Roldão Oliveira, Salma Mseddi, Maria da Conceição Goncalves, and Monem Kallel

Qualitative Appreciation of Water Resources in a Preserved Environment Under Anthropic Threat 1585
 Badreddine Saadali, El Fadel Derradji, Feyrouz Hafid, Yasmina Bouroubi, Nadjib Haied, and Mahrez Boulabeiz

Origin of High Fluorine Contents in Drinking Water in the Province Capital of Isparta, SW Turkey 1591
 Nevzat Özgür

Wadi Wastewater Flowing Effects on the Spring Water Quality of Sarida Catchment—West Bank 1597
 Waseem Ahmad and Marwan Ghanem

Contaminants of Emerging Concern in (Waste) Water: Evaluating the Knowledge Status Among Decision-Makers and Stakeholders in Tunisia 1603
 Olfa Mahjoub, Loubna Benyahya, Despo Fatta-Kassinou, Serge Chiron, Elke Fries, and Sarantuyaa Zandaryaa

Urban Wastewater Treatment by Infiltration Percolation: Comparative Study of the Purification Performance of Sand Filter Through a Simple and Double Column 1609
 Feryel Hajjaji and Saifeddine Eturki

Valorization of Oilfield Produced Water on the Recovery of Valuable Salt 1617
 Hassan ElGharbi, Mohamed Triki, Ridha Amdouni, Subrata Borgohain Gogoi, and Monem Kallel

Hydrogeochemical Investigation of the Apennine Carbonate Springs by Factor Analysis 1623
 Francesco Rufino, Gianluigi Busico, Emilio Cuoco, Matteo De Santis, and Dario Tedesco

Hydrochemical Evolution of Groundwater Within the Amansie and Adansi Districts of the Ashanti Region (Ghana) 1629
 Collins Tay, Michael Dorleku, and Samuel Koranteng

Subsurface Characterization Using Geoelectrical Sounding in Canaan-City Estate, Ota SW Nigeria: Implications for Groundwater Exploration 1639
 Kehinde D. Oyeyemi, Ahzegbobor P. Aizebeokhai, and BabaMayowa A. Bayo-Solarin

Characterization of the Fissured Layer Properties in Crystalline Bedrock Aquifers of Gbêkê Region in the Central Area of Côte D’Ivoire 1645
 Aristide Gountôh Douagui, Innocent Kouassi Kouamé, Boris Kouassi Kouamé, and Issiaka Savané

Impact of Recharging Structures on the Piezometry of the Grombalia Ground Water 1651
 Rym Mhamdi and Mohamed Mechergui

The Hidden Information in Observations of Groundwater Well Records in a Complex Multilayer Aquifer 1657
 África de la Hera-Portillo, Eduardo Peña-Corriá, Rodrigo García-Lorenz, Julio López-Gutiérrez, Ester Rodríguez-Jiménez, Rocío Martín-Gamo, Carmen Macías, Cristian Cobaleda, Fortunato García-López, and Teresa Orozco-Cuenca

Water Quality Assessment of the Shallow and Deep Aquifers of Hajeb Layoun-Jelma Basin (Central Tunisia) 1663
 Soumaya Aouiti, Fadoua Hamzaoui-Azaza, Mounira Zammouri, Monji Hamdi, and Fulvio Celico

Artificial Neural Networks: Intelligent Approach to Simulate Groundwater Level Pattern 1671
 Malek Derbela and Issam Nouri

Analytical Hydrological Model for the Planning and Design of Low-Impact Development Practices 1677
 Sonia Hassini and Yiping Guo

Seepage Velocity of Different Groundwater Aquifers in Halabja Saida Basin—NE of Iraq 1683
 Twana Abdullah, Salahalddin Saeed Ali, Nadhir Al-Ansari, and Sven Knutsson

Seepage Velocity Mapping Using ArcMap/GIS Software 1689
 Qais Al-Madhlom, Nadhir Al-Ansari, Hussain Musa Hussain, and Jan Laue

Water Management and Retention Opportunities Along the Hungarian Section of the Drava River 1697
 Ali Salem, József Dezső, Mustafa El-Rawy, and Dénes Lóczy

Integrated Ensemble Weight of Evidence and Logistic Regression for Potential Groundwater Mapping: An Application to the Northern Piedmont of High Atlas Mountains (Morocco) 1703
 Hassane Rahali, Siham Elaryf, Hicham Amar, and Bouchra Zellou

Smart Technologies for Environmentally Friendly Energy Production

Torrefaction of Wheat Straw and Sunflower Shells Biomasses as Low-Cost Materials for Energy Co-Generation 1713

H. Demey, T. Melkior, A. Chatroux, M. Grateau, P. Pons de Vincent, S. Thiery, H. Miller, and M. Marchand

Free-Methane: Producing Fuel from Waste CO₂ Using Renewable Energies 1721

Stefano Falcinelli

Optimization of Simultaneous Production of Bio-Hydrogen and Bio-Methane from Food Wastes 1727

Mouna Yahya, Christiane Herrmann, Samir Ismaili, Carsten Jost, and Achraf Ghorbal

Characterization of the Inclusion of Polymer Membrane for Application as Electrolyte in Direct Methanol Fuel Cell System 1733

Kaoutar Aghmih, Imane Touarssi, Said Gmouh, Miloudi Hlaïbi, and Sanaa Majid

Evaluation of the Methanogenic Potential of Tunisian Vegetables and Fruit Wastes: Biogas Production and Characterizations 1739

Samira Abidi, Gmar BenSidhom, Sana Amdouni, Mohamed Hechmi Aissaoui, and Aïda Ben Hassen Trabelsi

Study of Thermal Stability and Characterization of the Biodiesel from Waste Frying Oil 1745

Mariem Harabi, Ana Inés Fernández, and Mohamed Bouaziz

Deposition of Cd-Doped ZnO Thin Films as Transparent Electrode for Solar Cell Applications 1753

Fatma Özge Gökmen, Sinan Temel, and Elif Yaman

Utilization of Exhausted Oxygen from Nitrogen Plant to Improve Sulfur Recovery Unit and Reduce Emissions—Case Study 1759

Wahid Alzmzam and Walid Alfaghi

Remote Sensing and GIS for Environmental Monitoring and Management: Spatial Modelling and Tools in Environmental Monitoring and Assessment

Assessment of Drought Impact on Surface Water in the Mockes Dam of the Free State, South Africa, Using Remote Sensing Techniques 1769

Saheed Oke and Silent Ruzvidzo

GIS-Based Model for Vulnerability and Seawater Intrusion Risk Assessment by Combined Chemical Indicators and GALDIT Tools: The Case of a Coastal Aquifer in Monastir, Tunisia 1775
 Rihem Mejdoub El Fehri, Mahmoud Dlala, and Lamia Kouzana

The Ground Water Potential of a Key Junction Zone Between the Afar Rift Floor and Western Afar Margin of Ethiopia 1781
 Nicola Perilli, Simone Gorelli, and Abeer Albalawneh

Improvement of GIS-Based DRASTIC Model Using Step-Wise Weight Assessment Ratio Analysis (SWARA) and Two New Hybrid Frameworks (Iran) 1787
 Maryam Torkashvand, Aminreza Neshat, Saman Javadi, and Hossein Yousefi

Integration of ELECTRE III and AHP—Multicriteria Decision Analysis for Identification of Suitable Areas for Artificial Recharge with Reclaimed Water 1793
 Marwa Mahmoudi, Abdelwaheb Aydi, Nadhem Brahim, Wissal Issaoui, and Najet Shimi

Ecologic–Economic Zoning of a Small Water Catchment Basin in Vacaria, Southern Brazil 1799
 Vania Elisabete Schneider, Geise Macedo dos Santos, Sofia Helena Zanella Carra, Denise Peresin, Taison Anderson Bortolin, and Gisele Cemin

Geological Field Mapping and Heavy Metals Assessment in Soils of Abandoned Mine Site in Dorowa, Northcentral Nigeria 1805
 Kehinde D. Oyeyemi, Joyce Abuka-Joshua, Ahzegbobor P. Aizebeokhai, Osagie A. Ekhaguere, Opeyemi Joshua, and David O. Nduka

Combining GIS Applications and Analytic Hierarchy Process Method for Landfill Siting in Sulaimaniyah, Iraq 1811
 Karwan Alkaradaghi, Salahalddin Saeed Ali, Nadhir Al-Ansari, and Jan Laue

Remote Sensing and GIS for Environmental Monitoring and Management: Earth Observation for Land Use and Natural Ressources Assessment

Urban Morphology and Anthropogenic Heat Effect on Land Surface Temperature: Bab Ezzouar (Algiers) Case Study 1819
 Assia Fernini-Haffif and Ewa Berezowska-Azzag

Assessing Land Degradation Neutrality (LDN) in Southeastern Tunisia Based on Earth Observation Data and Open Source Applications	1829
Olfa Terwayet Bayouli, Bouajila Essifi, and Mohamed Ouessar	
Production of a Land Cover/Land Use (LC/LU) Map of Izmir Metropolitan City by Using High-Resolution Images	1837
Elif Sertel, Raziye Hale Topaloğlu, Kübra Bahşi, Beril Varol, and Nebiye Musaoğlu	
The Use of Satellite Image and GIS to Monitor Deforestation of Akure Forest Reserve and Its Environs, Ondo State, Nigeria	1847
Michael Oyinloye and Fidelis Ado	
Assessment of Vegetation Cover Using Normalized Difference Vegetation Index Based on Satellite Images: Case Study from Ajloun in Northern Jordan	1855
Anna Igorevna Kurbatova, Hani Abu-Qdais, Elizaveta Andreevna Grigorets, and Polina Viktorovna Kozhevnikova	
An Internet of Things and Wireless Sensor Networks Hybrid Architecture for Precision Agriculture Monitoring	1863
Gonçalo Marques and Rui Pitarma	
Trend Analysis Using Discrete Wavelet Transform (DWT) for Non-stationary NDVI Time Series in Tunisia	1869
Manel Rhif, Ali Ben Abbas, Imed Riadh Farah, and Beatriz Martínez	
Remote Sensing and Integrated Geophysical Investigations of Unstable Sections of Ibadan-Iwo-Osogbo Highway, Southwestern Nigeria	1875
Omwumi Ademila, Abel Idowu Olayinka, and Michael Adeyinka Oladunjoye	
Evolution of Aerosol Radiative Forcing in Beijing (China)	1883
Rajae Meziane, Mohammed Diouri, Ibtissam Marsli, and Azhare El Khabbouti	
Map of the Global Pollution of the Algiers Region Established by the IAP Method (Index of Atmospheric Purity)	1887
Henia Saib, Mohamed Toumi, and Mohammed Rahali	
Evaluation of TRMM 3B42 V7 Rainfall Product in Morocco	1895
Rachid Hadria, Adil Salhi, Tarik Benabdelouahab, Loubna Elmansouri, Hayat Lionboui, Hamza Ouatiki, Youssef Lebrini, Abdelaziz Htitiou, and Rida Khellouk	

Pilot Activities in Creating Soil Maps from Satellite Data—Struma River Valley Case Study 1901
 Hristo Nikolov and Toma Shishkov

Environmental Impacts of Natural Hazards and Environmental Risk Assessment: Water Quality Impacts on Environmental Ecosystems

The Impact of Environmental Factors on the *Diaphanosoma* sp Distribution in Ghrib Lake (Northern Algeria) 1909
 Somia Hamil, Siham Arab, Warda Esserhane, Mounia Baha, and Abdeslem Arab

Water Quality Shapes Freshwater Macroinvertebrate Communities in Northern Tunisia 1915
 Noura Slimani, David Sánchez-Fernández, Eric Guilbert, Moncef Boumaïza, and Jean Thioulouse

Surface Water Quality Assessment of Lacustrine Ecosystem Case Study of Boukourdane Dam, Algeria 1921
 Siham Arab, Somia Hamil, Ismahane Adaouri, Amin Chaffai, Ikram Nasrouche, and Abdeslam Arab

Application of Multivariate Statistical Analysis in the Assessment of Surface Water Quality in the Hydrographic Network of Mazafran Wadi, Algeria 1925
 Djaouida Bouchelouche, Hind Sefiane, Imane Saal, Mouna Hafiane, and Abdeslem Arab

Assessment of Drought Characteristics, and Its Impacts on Vegetation and Wheat Yield in Tunisia 1931
 Nada Ben Mhenni, Masato Shinoda, and Banzragch Nandintsetseg

Study of Water Quality Using Multivariate Analysis in Coastal Wetland of Réghaïa, Algeria 1937
 Djaouida Bouchelouche, Imane Saal, Mouna Hafiane, and Abdeslem Arab

Environmental Impacts of Natural Hazards and Environmental Risk Assessment: Environmental Characterisation and Analysis on Hydrological Hazards Systems

Risk Analysis of the Maximum Daily Precipitation in the Southwest of the Iberian Peninsula Over the Period 1861–2016 1945
 Leoncio García-Barrón, Mónica Aguilar-Alba, Julia Morales, and Arturo Sousa

Evaluation of Drought Severity Changes in Iran Using Hurst Exponent and Standardized Precipitation Index 1951
 Zahra Noorisameleh, William A. Gough, and M. Monirul Qader Mirza

Investigating Extreme Sea Levels from the Meteorologically Induced Modulation Along the English Channel Coasts 1961
 Imen Turki and Yasser Hamdi

Study of the Risks of the Tsunami at Tunisian Coasts 1967
 Lassaad Sahli, Kanfoudi Hatem, Aicha Abbassi, and Ridha Zgolli

Sea Level Characteristics and Return Periods at Port Said Harbour, Egypt 1975
 Tarek Mohamed El-Geziry

Modelling Flood Risk in Rural Areas: The Case of the Arbaa Taourirt Centre (Morocco) 1981
 Adil Salhi, Abdelmonaim Okacha, Sara Benabdelouahab, Mahjoub Himi, Tarik Benabdelouahab, and Albert Casas Ponsati

Probabilistic Multi-hazard Risk Assessment—Development of an Aggregation Model Based on the Algebra of Events 1989
 Yasser Hamdi, Amine Ben Daoued, Nassima Mouhous-Voyneau, and Philippe Sergent

Assessment of Land Use Vulnerability to Flood Disaster Management; and Control in Ikirun, Osun State, Nigeria 1997
 Martin Binde Gasu and Ayokunle Olaide Odusola

Coastal Flooding Risk Assessment Through Artificial Intelligence 2005
 Claudio Iuppa, Luca Cavallaro, Claudia Giarrusso, Rosaria Ester Musumeci, and Giovanni Savasta

Development of a Probabilistic Multi-flood Hazard Approach Considering Uncertainties and Climate Change—Application to the Coastal Flooding of the Havre (France) 2011
 Amine Ben Daoued, Nassima Mouhous-Voyneau, Yasser Hamdi, and Philippe Sergent

Environmental Impacts of Natural Hazards and Environmental Risk Assessment: Environmental Risk Assessment

Soil Erosion Assessment and Farmers’ Perception in South Mediterranean Basins: A Moroccan Case Study 2019
 Adil Salhi, Tarik Benabdelouahab, Yassin El Hasnaoui, Mhamed El Moussaoui, Abdelkarim El Morabit, Mahjoub Himi, Sara Benabdelouahab, Albert Casas Ponsati, Rachid Hadria, and Javier Martin-Vide

Trace Element Concentrations in Commercial Fish Collected from Coastal Area and Rivers of Bangladesh—Human Health Risk Assessment 2025
 Moumita Saha Bristy, Kishor Kumar Sarker, Mohammad Abdul Baki, Shamshad Begum Quraishi, Mohammad Shahidur Rahman Khan, and Md Firoz Khan

The Exposure-Happenstance Concept Model: A Case Study Within the Foot Slopes of Mayon Volcano, Albay, Philippines. 2031
 Ana Marie R. Abante

Wildfires and Socioeconomic Variables in Galicia, Spain: Panel Data Analysis 2039
 Jaime de Diego, Mercedes Fernández, and Antonio Rúa

Hazardous Materials Prediction Using an Artificial Neural Network and Meteorological FASDAS Data Assimilation 2045
 Hosni Snoun, Hatem Kanfoudi, Ghazi Bellakhal, and Jamel Chahed

Prediction of Earthquake-Induced Liquefaction State in Embankment Dams Using Back-Propagation Neural Network 2051
 Abdelatif Zeroual, Messaoud Djeddou, and Ali Fourar

Assessment of Static and Seismic Bearing Capacity Factors of Shallow Strip Foundations Using the Discontinuity Layout Optimization Procedure 2057
 Mohamed Khemissa and Imane Harzallah

Adding New Information Content to GNSS Measurements by SAR Data Processing in Studying a Landslide 2063
 Mila Atanasova and Hristo Nikolov

An Environmental and Financial Risk Assessment Protocol for the Investments in the Energy Sector 2069
 Antonio Nesticò, Gianluigi De Mare, Shuquan He, and Gabriella Maselli

Sustainable Management of Marine and Coastal Environments: Characterization and Management of Marine and Coastal Environments

Water Pollution Monitoring Study for Protected Areas at Eastern Mediterranean Sea, Turkey 2077
 Nevzat Özgür

Microplastic (MP) Pollution in Sidi Youssef Harbor of the Kerkennah Islands, Sfax (Tunisia) 2083
 Khawla Chouchene, Teresa Rocha-Santos, and Mohamed Ksibi

Comparative Study of Various Treatment Processes of Crude Oil Associated Water Produced from the Upper Assam Basin (India)	2089
TapanJyoti Gogoi, Subrata Borgohain Gogoi, Pranab Boral, and Monem Kallel	
Characterization of Deep-Sea Sediment Microbial Communities from Different Mediterranean Sea Regions	2095
Monia EL Bour, Micha Rijkenberg, Aymen Saadi, Maria Virginia Martins, and Noureddine Zaaboub	
Assessing the Efficacy of Dredged Sediments from Zarzis Harbor, Tunisia: Implication to Agriculture	2103
Afef Zouch, Mohamed Elwachem, Olfa Hentati, and Mohamed Ksibi	
Sedimentary Phosphorus Dynamics in the Mediterranean Rhône River Prodelta: Data-Modeling Approach	2111
Fatima Ezzahra Ait Ballagh, Christophe Rabouille, Françoise Andrieux-Loyer, Karline Soetaert, Khalid Elkalay, and Karima Khalil	
Characterization and Dynamics of the Pollutant Load Discharge Carried by the Mazafran River (N Algeria) on the Coastal Environment	2117
Zenati Billal, Inal Ahmed, Kourdali Sidali, Mesbaiah Fatma-Zohra, Meknachi Abdellah, and Bachouche Samir	
Socioeconomic and Ecological Situation of Mogador Marine Protected Area in Morocco	2123
Ghoufrane Derhy, Khalid Elkalay, Nezha Ait Taleb, Zainab Damsiri, and Karima Khalil	
Moroccan Atlantic Marine Research State of the Art: A Review Analysis	2129
Khalid Elkalay, Hanane Rhomad, Zainab Damsiri, Hassan Essekhry, Ghoufrane Derhy, and Karima Khalil	
The Study of the Heart of <i>A. Boyeri Caspia</i> in Environmental Quality Assessment	2135
Nailya Ibragimova, Saule Shalgimbayeva, Nikolay Popov, and Gaukhar Jumakhanova	
Sustainable Management of Marine and Coastal Environments: Tools in Marine and Coastal Sustainable Development	
Integration of Architecture and Landscape as Part of the Sustainable Development of the Coastline	2143
Magdalena Czalczynska-Podolska and Wojciech Bal	

Comparison of Pixel-Based and Object-Oriented Classification Methods for Extracting Built-Up Areas in Coastal Zone 2151
 Chayma Kefi, Amina Mabrouk, Nabila Halouani, and Haythem Ismail

Wetland Contracts: Voluntary-Based Agreements for the Sustainable Governance of Mediterranean Protected Wetlands 2157
 Giancarlo Gusmaroli, Giuseppe Dodaro, Ileana Schipani, Claudio Perin, Franco Alberti, and Stefano Magaouda

Repository of Technical Documents for a Sustainable Management of Marine and Coastal Environments: The New Portal www.coastalmapping.eu 2161
 Tullia Valeria Di Giacomo and F. Paolo DI Giacomo

Understanding the Source, Distribution, and Fate of Micro- and Nanoplastics in Natural Water Bodies 2167
 Valter Castelvetro, Andrea Corti, Alessio Ceccarini, Jacopo La Nasa, Tommaso Lomonaco, Antonella Manariti, Enrico Manco, Francesca Modugno, and Virginia Vinciguerra

An Algorithm for Assessment of the Water Purification by Seaweeds: An Application for a Black Sea Recreational Coastal Area 2173
 Sergey Kovardakov, Nataliya Milchakova, and Vladimir Alexandrov

The Condition of the Red Alga *Phyllophora crispa* (Hudson) P.S. Dixon and Proposals for MPA Optimization in Southwestern Crimea, Black Sea 2179
 Vladimir Alexandrov and Nataliya Milchakova

Which Is a More Reliable Bioindicator—Mussels or Seagrass? A Case Study of the Toxic Metal Pollution in the Seawater of Boka Kotorska Bay, Adriatic Sea 2185
 Slavka Stankovic, Ana Perosevic, Lato Pezo, Stevan Blagojevic, and Antonije Onjia

The Influence of Sea Surface Temperatures on Biodiversity of Gaeta Gulf, Italy 2191
 Matteo Gentilucci, Adriano Madonna, and Giulia Guerriero

Measures for the Protection and Sustainable Exploitation of Marine Biological Resources in an Oligotrophic Fishing Ground (Crete Island, Greece, E. Mediterranean) 2197
 Panayota Koulouri, Marianna Giannoulaki, Athanasios Machias, and Costas Dounas

New Insight into Marine Biotechnology: Carrageenans Chemical Features and Acetylcholinesterase (AChE) Inhibition Activity of Two Edible Seaweeds of the Genus <i>Kappaphycus</i>	2203
Oladokun Sulaiman Olanrewaju, Giuseppina Tommonaro, Giulia Guerriero, Chiara Fogliano, Carmine Iodice, Gennaro Velotto, and Annabella Tramice	
Sustainable Management of the Urban Environment	
An Economic Model to Assess the Long-Term Implications for Investments Aimed at Urban Sustainability	2211
Antonio Nesticò and Gabriella Maselli	
Integration of Sustainable Risk-Based Land Management Approach into Developing Countries, Libya as a Case Study	2217
Salahadein Ahmed Alzien and Rafiq Azzam	
Safety Maintenance: Reduction of Dioxins/Furans Levels After Urban Landfill Upgrade (Armenia)	2223
Anahit Aleksandryan and Artak Khachatryan	
Impact of the Extension of Energy Infrastructure Elements on the Landscape	2227
Edward Preweda and Krzysztof Butryn	
Integrating Plants and Trees in the Design of Urban Parks in Marseille	2233
Brice Dacheux-Auzière and Yves Petit-Berghem	
Urban Morphology and Solar Gains in Cities with Warm Mediterranean Climate: Comparison of Two Collective Residential Complexes in Tunis, Tunisia	2241
Nour El Houda Jouini, Fakher Kharrat, and Safa Achour-Younsi	
Development and Validation of a Grid to Evaluate Ecosystem Services of Public Urban Green Spaces in Porto (Portugal)	2247
Diogo Guedes Vidal, Cláudia Oliveira Fernandes, Lilian Monteiro Ferrari Viterbo, Helena Vilaça, Nelson Barros, and Rui Leandro Maia	
Numerical Study of Traffic Noise Dispersion Based on the Coupling Between First-Order Traffic Model and French Noise Prediction Method	2253
Hana Mosbahi, Abdessalem Jbara, Emna Khamassi, and Khalifa Slimi	

Application of the Ultrasonic Sounding Method for Monitoring the Preservation of Stone Monuments	2261
Evgenii Nesterov, Vera Egorova, Vladislav Shakhov, and Olga Frank-Kamenetskaya	
Recycling Way of Sludge in Handcraft Pottery (Marrakesh, Morocco)	2265
Rachida Bouachera, Mariam El Aoud, Rachida Kasimi, Mounsiif Ibnoussina, Yassine Taha, Hicham El Boudour El Idrissi, and Rachid Hakkou	
Pyrolysis of Municipal Sewage Sludge within a circular economy vision: Production of sustainable Biofuels and Economic Biofertilizers	2271
Aïda Ben Hassen Trabelsi, Athar Friaa, Samira Abidi, Slim Naoui, and Faycel Jamaoui	
Sustainable Management of the Indoor and Built Environment	
Evaluation of Display Materials in Shanghai Museum: Situation in the Past Three Years and Prospect of the Future Development	2281
Jingyi Shen and Yijia Shen	
Camphor Wood Used as a Museum Storage Material: An Indoor Air Pollution Source Harming Metallic Objects	2287
Jingyi Shen	
Infrared Thermography Applied to Inspection of Wood Damages	2293
Rui Pitarma, Lívia Pereira, and João Crisóstomo	
Sustainable Preservation of the Built Environment: A Case Study of the Historic Centre of Oporto	2299
Sílvia Alves and Juan Sendra	
Improvement of Classroom Conditions and CO₂ Concentrations Through Natural Ventilation Measures Reinforced with NBS Implementation	2305
Jose Feroso, Teba Torres, Miguel Ángel Antón, Alejandro Peña, Jesús Muñoz, Salustiano Torre, Teresa Batista, and Ricardo Osorio de Barros	
An Improved Proposal for Using Laminar Copper as a Biocidal Material in Hospitals in Touch Surfaces: A Study on Volatiles	2311
Paula Aillón and Blanca Parga	

Environmental-Change-Related Impacts on Human Health: Environmental and Occupational Health	
Novel Sensor Chip for IoT/M2M- and LTE/3G-Network-Based Water Quality Monitoring for Off-grid Water Systems	2319
Mokhtar Guizani, Shenxing Wang, Ryusei Ito, Masayoshi Johmen, Ken Ushijima, Toshikazu Kawaguchi, and Naoyuki Funamizu	
Stability Study of a Ratio-Dependent Eco-epidemiology Model of the Salton Sea Using the Optimal Derivative	2325
Fatiha Lassouani and Abdel Karim Ferouani	
Assessment of the Bacterial Pollution in the Distribution Network/Case Study of Souk Ahras Town, Algeria	2331
Mohamed Amine Bensoltane, Lotfi Zeghadnia, Abdel Krim Guebail, Ahmed Salah Araibia, and Lakhdar Djemili	
An Integrated Framework of Environmental Physics and Epidemiology: The Biometeorological Aspect of Thermal Environment and Health Project (BeAT Heat)	2337
Katerina Pantavou, Spyridon Lykoudis, Filippos Tymvios, Emily Vasiliadou, Kleanthis Nicolaidis, Chrysanthos Savvides, Panayiotis Yiallourous, Constantinos Cartalis, and Georgios Nikolopoulos	
Health Risk Assessment of Occupational Exposure to Perchloroethylene and Trichloroethylene in Dry Cleaning in Sfax City (Tunisia)	2343
Fatma Omrane, Moncef Khadhraoui, Amine Abid, Mabrouka Mitigui, Boubaker Elleuch, and Imed Gargouri	
Assessment of Potential Health Hazards of Trace Elements Contamination of Groundwater in a Shallow Aquifer: A Case Study in Guenniche (Northern Tunisia)	2349
Nizar Troudi, Fadoua Hamzaoui-Azaza, Ourania Tzoraki, and Mounira Zammouri	
Effects of Outdoor Air Pollution on Human Health in Mohammedia, “Morocco”	2359
Rachida El Morabet, Abderrahmane Adoui El Ouadrhiri, Roohul Abad Khan, Said Mouak, and Mohamed Aneflouss	
Glycol Ethers in Water-Based Products: Determination and Evaluation According to European Directives	2365
Faycal Faïdi, Samiha Hammami, Radhouane Chakroune, and Abderrazek Hedhili	

**Environmental-Change-Related Impacts on Human Health:
Humain Health**

**Influence of Monthly Temperatures on the Intra-annual Distribution
of Autochthonous Malaria in Spain** 2373

Arturo Sousa, Julia Morales, Mark Vetter, Mónica Aguilar-Alba,
and Leoncio García-Barrón

**For a Better Literacy of Tunisians in Eco-health:
Leishmaniasis Case** 2379

Foued Maaoui, Imen Mounni, and Lasaad Mouelhi

**“This Heat Is Killing”: Perception of Heat Stress Among Elderly
Women in Ibadan, Nigeria** 2385

Tolulope Osayomi and Rebecca Chinweokwu Ugwu

**The Potential of Green Areas Exposure on Increasing People’s
Physical Activity** 2391

Silvestre García de Jalón, Aline Chiabai, Sonia Quiroga, Cristina Suárez,
Pablo Martínez, and Timothy Taylor

**Genetic, Environmental, and Dietary Risk Factors of Colorectal
Cancer: A Case–Control Study in the Algerian East** 2395

Samira Negrichi and Salima Taleb

**Relationship Between Anthropometric Parameters and Hypertension
in an Algerian Adult Population According to BMI, Waist
Circumference, and Waist circumference-to-Height Ratio** 2403

Salima Taleb, Kafila Boulaba, Ahlem Yousfi, Nada Taleb, Basma Difallah,
and Samira Negrichi

**Antimicrobial Activity of Oak Wood Against Nosocomial
Acinetobacter Baumannii of Human and Animal Origin:
A One Health Approach** 2413

Muhammad Tanveer Munir, Christophe Belloncle, Florence Aviat,
Michel Federighi, Hélène Pailhoriès, and Matthieu Eveillard

About the Editors



Mohamed Ksibi completed his Ph.D. in 1993 in Applied Chemistry at the University of Poitiers, France. He also gained the Habilitation (HDR) in Chemistry from the University of Sfax, Tunisia in 2003. He was appointed as a full Professor of Chemistry in 2009 at the Higher Institute of Biotechnology of Sfax (ISBS). His areas of research interest include removal and toxicology assessment of persistent organic pollutants in the environment (water and sediment/soil). He has supervised ten theses to completion and examined a further five Ph.Ds. He has also supervised fifteen MSc. theses. He has co-published about fifty-five papers, eight book chapters and co-edited a book (two volumes): *Recent Advances in Environmental Science from the Euro-Mediterranean and Surrounding Regions*. He is the co-editor-in-chief of the *Euro-Mediterranean Journal of Environmental Integration* (h-index 24). Dr. Ksibi was the Institute's Deputy Director of the ISBS from August 2011 until December 2017; he also served as the Director of the Department of Biotechnology and Health at ISBS from May 2008 until May 2011. He has been the chairman for the 1st in 2017 and the 2nd in 2019 of the Euro-Mediterranean Conference for Environmental Integration (<https://www.emcei.net>).



Achraf Ghorbal is the Vice-Director of the Higher Institute of Applied Sciences and Technology of Gabes–University of Gabes–Tunisia. Dr. Ghorbal obtained his M.Sc. in Processes and Materials Engineering (2003) and a Ph.D. in Chemistry of Materials (2006) from the University of Haute Alsace–Mulhouse–France. In 2007 he joined the French Atomic Energy Commission (Commissariat à l'énergie atomique) in Saclay–France, as a post-doctoral fellow. In 2008 he was hired as Assistant Professor, and then promoted to Associate Professor in Materials Sciences in 2015 at the University of Gabes–Tunisia. His research focuses on wastewater treatment, biopolymers, eco-materials and bio-composites for environmental applications. Dr. Ghorbal has authored and co-authored over forty scientific papers (peer-reviewed papers, books, book chapters, and patents), coordinated as a principal investigator in research and educational projects financed by national or international funds (e.g. Erasmus + CBHE promoted by the European Commission Agency; Indo-Tunisian joint project), and serves as peer reviewer for several high-impact journals (e.g. *Waste Management*; *Environmental Science and Pollution Research*). His work has been internationally recognized by several prestigious distinctions such as the Springer Best Reviewer Award (2017, Euro-Mediterranean Conference for Environmental Integration). Since 2019, Dr. Ghorbal is a managing and developmental editor of the *Euro-Mediterranean Journal for Environmental Integration*—a Springer Nature journal.



Sudip Chakraborty obtained a Doctorate in Chemical Engineering from University of Calabria, Italy. He currently works at the Laboratory of Transport Phenomena and Biotechnology, University of Calabria, Italy. He has successfully gained the Abilitazione Scientifica Nazionale—full professor in sector—ING-IND 24, and is also adjunct professor at Mindanao State University, the Philippines. Dr. Chakraborty has delivered several keynote/invited lectures and presentations in many international conferences all over the world. His major fields of interest are membrane separation, plasmonic nanoparticles, composite materials, energy and process intensification.

Dr. Chakraborty with h-index-30 has published more than ninety-five research publications in international SCI-indexed journals/book chapters, as well as more than seventy-five conferences. He has edited books and book chapters apart from several special issues in SCI-indexed journals. Dr. Chakraborty has also chaired technical sessions in many International Conferences. He is a member of several professional bodies such as the European Membrane Society, the Finnish Catalysis Society and the American Oil Chemists Society. He was also a visiting researcher at Massachusetts Institute of Technology (MIT), Boston, USA and Yale University, New Haven, Connecticut. Dr. Chakraborty is an associate editor of *Groundwater for Sustainable Development* (Elsevier) as well as chief editor and journal development editor of the *Euro-Mediterranean Journal of Environmental Integration* (Springer Nature). He has also edited special issues for Springer, Elsevier and MDPI journals.



Helder I. Chaminé is a skilled geologist and Professor of Engineering Geosciences at the School of Engineering (ISEP) at the Polytechnic of Porto, Portugal. He has over thirteenth years' experience in multidisciplinary geosciences research, consultancy and practice. He studied geological engineering and geology (B.Sc., 1990) at the Universities of Aveiro and Porto (Portugal), respectively. He received his Ph.D. in geology at the University of Porto in 2000 and spent his postdoctoral research in applied geosciences at the University of Aveiro (2001–2003). In 2011 he received

his Habilitation (DSc) in geosciences from Aveiro University.

Presently, he is Head of the Laboratory of Cartography and Applied Geology (LABCARGA|ISEP), Senior Researcher at the Centre GeoBioTec|U. Aveiro and Centre IDL|U.Lisbon, and is a member of the executive board of the MSc+BSc Geotechnical and Geoenvironmental Engineering (OE+EUR-ACE Label) and the Department of Geotechnical Engineering (ISEP). Currently, he belongs to the board of the Portuguese Association of Geologists (APG), Portuguese Committee of Environmental Geotechnics from SPG, and the International Association of Hydrogeologists–Portuguese Chapter. He was a board member of the SPG - Portuguese Geotechnical Society (2016–2020) the APGeom–Portuguese Association of Geomorphologists (2009–2013). Before joining the academy, he worked for over a decade in international projects for the geo-environment, mining, geotechnics and groundwater industry and/or academia. He was a consultant and/or responsible for over seventy projects in rock engineering, applied geology, hydrogeomechanics, slope geotechnics, mining geology, exploration hydrogeology, hard-rock hydrogeology, water resources, urban groundwater and applied mapping (Mozambique, Portugal and Spain).

He has co-authored over 200 publications in indexed journals, conference proceedings/full papers, book chapters, technical and professional papers. He co-edited over 14 special volumes, as well as is presently evolved in editing themed issues for 5 international journals. He has a wide activity as a referee for several international journals. He served as invited Expert Evaluator of Bologna Geoscience programme for DGES (Portugal) and Scientific Projects Evaluation for NCST (Kazakhstan) and NRF|RISA (South Africa), as well as Coordinator of “Geology on Summer/Ciência Viva” programme at ISEP for geosciences dissemination. He has been also active with teaching and supervising of many Ph.D., M.Sc. and undergraduate students.

Helder I. Chaminé has worked on the editorial boards of the *Arabian Journal of Geosciences* (SSG+Springer), *Hydrogeology Journal* (IAH+Springer), *Geotechnical Research* (ICE), *Springer Nature Applied Sciences*

(Springer), *Mediterranean Geoscience Reviews* (Springer), *Discover Water* (Springer), *Euro-Mediterranean Journal for Environmental Integration* (Springer), *Geosciences* (MDPI), *Revista Geotecnia* (Portugal), and *Geología Aplicada a la Ingeniería y al Ambiente* (Argentina), among others. Currently, he is co-chair of the scientific committee of the 3rd International Workshop on Natural Hazards–NATHAZ'22 (Terceira Island, Azores, May 2022) with the support of the Springer.



Maurizio Barbieri holds a degree in Geological Sciences (1994) and a Ph.D. degree in Earth Sciences (1998) from Sapienza University of Rome, (Italy). He is currently Associate Professor of Environmental Geochemistry and Hydrogeochemistry at Sapienza University of Rome (Italy). His current research focuses on the application of the geochemistry methodologies in the characterization of environmental problems. In particular he has studied the distribution of elements and isotopes in the Earth systems with emphasis on the use abundances and isotopic ratios in defining the interaction between different reservoirs (mantle, crust, atmosphere and hydrosphere). He also has related interests in environmental geochemistry and health, studying the role of toxic trace elements (e.g. As, B and Hg), deriving from hydrogeochemical anomalies of natural origin, on water quality.

Maurizio Barbieri was environmental advisor (Hydrogeochemistry) for the International Project (2016–2019) SECOSUD II–Conservation and equitable use of biological diversity in the SADC region. The project was financed by the Italian Agency for Development Cooperation and implemented through Eduardo Mondlane University, South African National Park and Sapienza University of Rome.

He was scientific coordinator (2014–2016) for the geochemical model of the Vico Lake (Central Italy), with particular regard to environmental arsenic. Client: Regional Agency for Environmental Protection of Lazio.

He was scientific coordinator for the Water Unit of the International Project (2012–2014): Institutional Support to the management of Protected Areas in Albania, with funding from the International Union for the Conservation of Nature (IUCN).



Giulia Guerriero received her Ph.D. at the University of Naples Federico II, Italy, where she is currently Associate Professor of Comparative Anatomy and Cytology and Chairman of the Comparative Endocrinology Laboratory, and is on the Advisory Board for the Center for Environmental Research. She performed postdoctoral work at the Department of Pharmacology, Thomas Jefferson University, Philadelphia, PA; the Department of Ob/Gyn, University of Illinois., Chicago, IL; and the Department of Physiology, Oregon Health Sciences, University of Portland, Oregon (USA). Her research efforts have focused on the correlation between oxidants and antioxidants in physiological defenses; on the role of steroid receptors in reproduction, and on the importance of barcoding in the evaluation of species-specific molecular responses. She is currently conducting research on the reproductive health effects of climate change, environmental pollution, sustainable economies and fisheries, and resilient systems. She has served on several working groups and technical committees and, as unit coordinator, in national and international projects. She has organized and participated in international conferences. Dr. Guerriero has published in relevant refereed international journals, and is currently serving as editor of several international journals. Further, she is a reviewer of international journal conference papers, books, research theses, national and international research proposals, as well as a BIES external examiner for UNESCO. She is a member of several national and international scientific societies and of the *barcodingitaly* consortium. Since 2011 she has been a representative of bilateral agreements between Federico II University and universities and research centers in Egypt, Algeria, Morocco, Malaysia and Japan.



Olfa Hentati is an Associate Professor (2019) at the Higher Institute of Biotechnology (ISBS), University of Sfax. Since 2006 she has been a research member at the Laboratory Environmental engineering et Ecotechnology (GEET-LR16ES19) at the National School of Engineers of Sfax (ENIS). She received her Diploma in Biology and Functional Exploration from the Faculty of Medicine at the University of Tunis, Tunisia, in 1988; her BSc and MSc in Cell Biology from the University of Poitiers, France in 1993 and 1994 respectively; and her Ph.D. in Cell Biology and Physiology from the University of Poitiers, France in 1999.

In 2017 Dr. Hentati gained *her Habilitation in Biological Engineering*. The focus of her research is on the use of terrestrial and aquatic organisms as bioindicators of chemical pollution, with particular emphasis to the influence of biological and environmental factors on the bioaccumulation of trace metals, *raw* and chemically treated dyeing wastewater, phenols and pharmaceuticals residues. She has wide experience on the ecotoxicological approach in arid to semi-arid areas, with particular emphasis to the characterization of key sentinel species to assess the early occurrence of biological disturbance of anthropogenic origin, and the toxicity and sensitivity to pollutants of arid-adapted organisms. She is associate editor on the *Euro-Mediterranean Journal for Environmental Integration* and serves as a referee in several peer-reviewed scientific journals.



Abdelazim Negm is a professor of Hydraulics and Water Resources in the Water and Water Structures Engineering Department at the Faculty of Engineering at Zagazig University. He worked as a demonstrator in the Faculty of Engineering, Zagazig University in 1986 and continued there until he occupied the position of Vice Dean for Academic and Student Affairs. He worked for the Egypt–Japan University of Science and Technology (E-JUST) as a professor of Water Resources from December 2012 until September. 2016, and was chairperson of the Environmental Engineering Department at E-JUST from March 2013 until March 2016.

Professor Negm has published more than 350 scientific papers in national and international Journals and conferences, and about fifty book chapters. He has participated in more than eighty-five conferences and was a keynote speaker at several national and international conferences. He has been awarded prizes for best papers three times. His research areas include hydraulics, hydrology and water resources. Currently, he is very interested in sustainability studies, sustainable development and the green environment in addition to water resources management.

Professor Negm is a member of IAHR and is the head of the Egyptian permanent scientific committee for Water Resources (115) for the promotion of associate and professorship positions for the cycle 2019–2022, and was the Vice Head for the cycle 2016–2019. He is a member of the editorial board of several scientific journals and international conferences, associate editor-in-chief for *IWTJ* and was a member of the organizing committee of Oceanography 2015, and IWTC2013-IWTC2017. Additionally, he was Secretary General of the IWTC (www.IWTC.info) from 2013 until 2017. He was the head of the ZU committee for assessment of the scientific publications of ZU faculties until December 2018. Currently, he is organizing several contributed volumes to be published by Springer International Publishing during 2019/2020, after the successful publication of twelve contributed volumes by Springer Nature during the years 2016–2019, under the Handbook of Environmental Chemistry (HEC). Recently, four contributed volumes were published under Springer Water series (2020). He is the editor-in-chief of *EIJEST* (Faculty of Engineering, Zagazig University), associate editor of *IWTJ* (IWTA) and *EMJEI* (Springer) and guest editor of *AJGS*–Springer. He is the principal investigator of several international projects. Currently, he is a member of the editorial board of the HEC series.

Professor Negm is listed in: Marquis' *Who's Who?* for over than ten years until now; IBC's *2000 Outstanding Intellectuals of the 21st Century*; and the ABI Directory for his achievement in the fields of hydraulics and water resources. He has been nominated for many other awards from both IBC and ABI.



Anthony Lehmann was trained as an aquatic biologist and is now associate professor at the Institute for Environmental Sciences at the University of Geneva in Switzerland. He is a pioneer in combining Geographic Information Systems (GIS) with statistical modeling in the field of species distribution modeling, and has published and made available the first package called GRASP to build spatial predictions from point observations of plant and animal distributions. More recently, he coordinated the FP7 enviroGRIDS project, in which he concentrated on the use of hydrologic modeling to fill the gaps between scientific information and decision-making in the Black Sea catchment, by building capacity on Earth Observation and data-sharing approaches in the framework of the Global Earth Observation System of Systems (GEOSS). He is the coordinator of the H2020 GEOessential project on Essential Variables derived from earth observations. He coordinates also a Swiss national research proposal entitled SWATCH21 on “Eco-hydrologic services of Swiss rivers and catchments under climate and landuse scenarios”. Since the end of the enviroGRIDS project in 2013, Anthony Lehmann is orienting his research on spatially-explicit environmental assessment such as the Ecosystem Services and Nexus approach. Together with NatCap group from Stanford University, he wrote a review paper on “Lifting the barriers of online tools to address sustainability challenges”. He collaborates also with the University Autonomous of Barcelona on the use of their nexus tool for “Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism” in complex socio-ecological systems. He is associate editor on the journal *Environmental Sciences and Policy* where he is particularly editing the papers related to biodiversity and hydrologic issues with links with information technologies and modeling. He co-coordinated the edition of a MOOC on Ecosystem Services. He is responsible for a continuing education program on “Geomatics for a Sustainable Environment”.



Jörg Römbke has a Ph.D. and a Diploma in Biology from the University of Frankfurt am Main. In 1994 he co-founded ECT Oekotoxikologie GmbH (located in Flörsheim/Germany) as a private contract research laboratory, where he is still one of two managing directors. Dr. Römbke is responsible for ecotoxicological effect and fate tests as well as the environmental risk assessment of chemicals (pesticides, heavy metals or pharmaceuticals) working both for the chemical industry and for national and international governmental authorities. He has published about 150 papers in indexed journals. Dr. Römbke specializes in the taxonomy, biogeography and ecology of soil fauna, in particular Oligochaeta such as earthworms and Enchytraeidae. He is involved in several ecological and ecotoxicological field-studies in Germany, other European countries, Brazil (Amazonas, Parana) and North Africa, most recently the EU-FP7 project EcoFINDERS. He is especially interested in the development and standardization of ecotoxicological test methods as well as in the international harmonization of methods for biological soil monitoring, for example, serving as chair of ISO TC 190/SC4 (the committee responsible for biological methods).



Armando Costa Duarte obtained a Chemical Engineering five-year degree at the University of Oporto in 1977, a Ph.D. in Public Health Engineering at the University of Newcastle-upon-Tyne in 1981, and the Habilitation in Chemistry at the University of Aveiro in 1989. He has over thirty-five years of internationally recognized experience in analytical chemistry, qualimetrics and analytical quality assurance aiming at obtaining experimental data to support decisions on food safety, health and environmental protection, as well as sustainable development.

His research has made significant contributions in the field of distribution, availability and the fate of chemical compounds in different environmental compartments, chemical speciation and dynamics in coastal environments, and the characterization of natural organic matter and its interaction with contaminants of environmental significance. Armando da Costa Duarte has coordinated over thirty Ph.D./Master students and is currently coordinating the work of several Ph.D. and MSc students in their development of scientific and technological knowledge of excellence on analytical chemistry, qualimetrics and analytical quality assurance. He has either participated or coordinated over seventeen research projects funded by international and national funding agencies. In addition to his ten published books and more than thirty book chapters, Armando da Costa Duarte has over 560 significant peer-reviewed publications. He has also been on the editorial/review panels of reputed international and national scientific journals, and has contributed more than 200 oral/poster communications in scientific meetings. He has received two awards and/or honors. In professional activities he has interacted with 1021 collaborator(s) as co-author of scientific papers. In January 2020 he had an h-index ranging from 53 on SCOPUS to 65 on Google Scholar and total citations ranging from 11987 (SCOPUS) to 16684 (Google Scholar). More details can be found at <https://orcid.org/0000-0002-4868-4099> and <http://www.cesam.ua.pt/aduarte>.



Elena Xoplaki is an expert in Mediterranean climate change research. She has conducted analysis on extremes (heat waves, floods, droughts, etc.), paleoclimatology, climate impacts on societies, climate reconstructions/model comparisons and the influence of circulation on the European and Mediterranean climates. She has participated in and coordinated several European, Swiss and US research projects. From August 2011 she has been awarded an Akademischer Rat position at the Justus-Liebig-University Giessen in Germany. Over the past years, Dr. Xoplaki was strongly involved in the Climate Change and History Research Initiative at Princeton University: “A comparative approach to

climate, environment and society in the Eastern Mediterranean: Towards understanding the impact of climate on complex societies.” Her current work also deals with renewable energies and wind power production and climate change for human health aspects. She is also a Steering Committee member of the network of “Mediterranean Experts on Climate and Environmental Change (MedECC): Towards an improved scientific assessment of climate change and its impact in the Mediterranean Basin.” She has more than seventy peer-reviewed publications and a h-index of 38.



Nabil Khelifi holds a B.Sc. in Natural Sciences and a M.Sc. in Earth & Environmental Sciences from the University of Sfax in Tunisia (2004). He received fellowships from the global change System for Analysis, Research and Training (START) in 2005 and the German Academic Exchange Service (DAAD) from 2006 to 2010 to continue with his Ph.D. studies in Marine Geosciences at the University of Kiel in Germany. After his Ph.D. in 2010, Dr. Khelifi received a postdoctoral research grant from the German Science Foundation (DFG) to start his self-designed research projects at the GEOMAR–Ocean Research Centre in Kiel, Germany on reconstructing past changes in oceanography and climate in the North Atlantic and the Mediterranean Sea using marine sediment samples retrieved by the International Ocean Drilling Program (IODP) and applying foraminiferal and geochemical proxy methods. He published his research work in some reputable journals. Dr. Khelifi also received funding from the European Science Foundation (ESF) and some European universities to co-organize two workshops on Pliocene climate in Bordeaux, France (2009) and Bristol, UK (2013). He also received the Swiss Government Excellence Scholarship (SGES) to continue with his research projects at ETH Zurich, Switzerland in early 2014. However, he decided in March 2014 to pursue his career as a publishing editor with Springer, a part of Springer Nature in Heidelberg, Germany. He is mainly responsible for developing Springer’s publishing program in the Middle East & North Africa (MENA). The program currently consists of developing eighteen journals and publishing about

forty scientific books every year. In January 2017 he was promoted to Senior Publishing Editor with Springer. Dr. Khelifi also helps researchers in MENA countries publish their work by delivering educational seminars for authors, reviewers and journal editors to help improve publication output and quality. Dr. Khelifi is also a Visiting Lecturer at the University of Carthage, Tunisia and King Saud University, KSA giving MSc and Ph.D. courses in geo-communication/-presentations and techniques of paper publishing, as well as career development training and professional development/soft skills workshops. Recently, Dr. Khelifi has been awarded with the 2016 Africa Green Future Leadership Award in recognition of his work contributing to sustainable development through advancing science and promoting publications in Africa and the Middle East.



Gilles Colinet (Belgian, born 1967) is assistant professor at Liege University (Gembloux Agro-Bio Tech). In 1991 he graduated as an engineer in agronomy with a specialization in soil science. His professional career began with a two-year cooperation work in Mali, a few month research at Liege University dedicated to modeling the global carbon cycle, and two years of technical and administrative support on GIS and databases for the Agriculture General Direction of the European Commission.

In 1997 he returned to Gembloux Agro-Bio Tech as a research and teaching assistant under the supervision of Prof. Laurent Bock. The title of his Ph.D. (in French) was: “Metallic trace elements in soils: Contribution to knowledge of the factors of their spatial distribution in the Belgian silt loess” (defense in 2003).

After studying the natural background, he focused his researches into trace elements on the relationships between soil, water and plants—the bioavailability and mobility of elements—and mapping in contaminated environments, among which were the calaminary sites in Belgium and the copper ecosystems in Katanga.

Simultaneously, Gilles Colinet developed research on: (1) risk of contaminations of the food chain in urban gardens, the management and rehabilitation of brown-fields and soil remediation; (2) monitoring of soil

quality in croplands and forests in relationship with the quality of the hydrosphere (nitrate, phosphorus, pesticides ...); and (3) the integration of digital soil maps and point databases to build soil reference systems in Southern Belgium.

Gilles Colinet teaches applied soil science at Liege University to bioengineers, geologists and geographers, as well as in specialized Master degrees. He also coordinates a formation about the management of polluted sites in continuing education.

Gilles Colinet has supervised numerous Master theses in Belgium and overseas, seven Ph.D.s—plus seven others at the present time—and twenty or so research projects in Belgium, the Democratic Republic of Congo, Morocco, Burkina Faso, China, the Philippines and Bolivia.



João Miguel Dias holds a Ph.D. in Physics and is Associate Professor with Habilitation in the Department of Physics at the University of Aveiro, where he is the current Director. He founded and leads the Estuarine and Coastal Modeling Division (<http://www.nmec.eu/>), and is a researcher at the Centre for Environment and Marine Studies) (CESAM), where he is co-coordinator of the Integrated Environmental Systems thematic line. With nearly thirty years of professional experience, he is a specialist in the numerical modeling of physical processes in estuarine and coastal zones. He has participated and coordinated several national and international research projects and has extensive experience in consulting for public and private organizations. He is the editor and reviewer of a large number of international journals, and has integrated project and scholarship evaluation panels in the field of marine science for various national and international agencies. He is the author of over 150 papers in international journals in the areas of environmental sciences and oceanography, and has supervised a significant number of postdoctoral researchers and Ph.D. and M.Sc. students.



Imed Gargouri is an associate professor at the Faculty of Medicine, Sfax University since February 2012. He is the holder of (i) a MD from Sfax University since 1996, (ii) a National Diploma in occupational medicine since September 2000, (iii) a Master's Degree in environmental and health research methods from the University of Grenoble (France) since September 2002, (iv) a Ph.D. in toxicology and occupational health risk assessment from Lille University (France) in 2009. He is also a researcher at the Laboratory of Environmental Engineering and Ecotechnology (National School of Engineering, Sfax University). His research themes deal with (i) chemical risk assessment, (ii) occupational toxicology and (iii) environmental health impacts.

Professor Gargouri has published about twenty-five research papers at the national and international levels, two books and five book chapters mainly in the fields of the environment, chemical risk assessment, occupational toxicology, environmental health impacts and occupational health. He is also a reviewer for several international specialized journals, has chaired several international and national conference sessions and is a member of several scientific committees.



Eric D. Van Hullebusch received his Ph.D. (Aquatic Chemistry and Microbiology) from Université de Limoges (France) in 2002. From November 2002 until October 2004 he was a Marie Curie Postdoctoral fellow at Wageningen University & Research (the Netherlands) where his research focused on the optimization of anaerobic granular sludge reactors by studying the speciation, bioavailability and dosing strategies of trace metals. In 2005, he was appointed as associate professor in biogeochemistry of engineered ecosystems at Université Paris-Est (France). In 2012, Eric D. van Hullebusch obtained his Habilitation qualification in Environmental Sciences from Université Paris-Est (France). The title of his Habilitation thesis is "Biofilms in the environment:

from anaerobic wastewater treatment to material bioweathering”. From September 2016 until August 2018, he worked at IHE Delft as chair professor in Environmental Science and Technology and head of the Pollution Prevention and Resource Recovery chair group. In September 2018 he joined Institut de Physique du Globe de Paris (France) as full professor in Biogeochemistry of engineered ecosystems.



Benigno Sánchez Cabrero was born in Iscar (Valladolid), Spain, in 1955. He holds a Ph.D. in Chemistry and a B.Sc. Degree in Biology from the Autonomous University of Madrid. He also has a Diploma in Environmental Engineering, and others in Territorial Zoning and Environment from the University of Valencia.

From 1985, and currently, Dr. Sánchez is a senior researcher at the CIEMAT (Centro de Investigaciones Energéticas Medioambientales y Tecnológicas).

He has been the Head of the Environmental Applications of Solar Radiation to Air Group in the PSA (Plataforma Solar de Almería) from 1990 to 2014. From 2014 he is the Head of Analysis and Photocatalytic Treatment of Pollutants in Air (FOTOAIR) in the Renewable Energy Division of CIEMAT.

Benigno Sánchez Cabrero has thirty-four years of R&D expertise, participated in thirty-seven national and international R&D projects funded by competitive public programs, and has been the head researcher in twenty-three of them. He has been involved in nine R&D contracts with businesses of particular relevance.

He is the co-author of sixty-five scientific-technical publications, and more than one hundred contributions to congresses, courses, seminars and conferences.

He directed seven Ph.D. theses with two more currently underway, plus nineteen Degree projects in Environmental Science and Chemical Engineering at the UAM, URJC, and UCM in Madrid.

He is the first author of a patent and a utility model.

Benigno Sánchez Cabrero has been the national representative to COST 612 (Brussels) and Task Forces related to the effects of air pollution on ecosystems (UN, Geneva).

He is a referee for Applied Catalysis B: Environmental, Building and Environment, and CYTED, COLCIENCIAS, ANPCyT Evaluator among others.



Settimio Ferlisi is Associate Professor of Geotechnics at the University of Salerno (UNISA) in Italy where he currently teaches “Geotechnics” and “Foundations”. The results of his scientific activity are testified by numerous publications as well as by his participation in the Center of Excellence on Hydrogeological Risk of UNISA, three projects of relevant national interest (in one case as coordinator of the research unit), and a EU-funded research project. He is on the Board of Professors of the Ph.D. in “Risk and Sustainability in Civil, Architectural and Environmental Engineering Systems” with administrative headquarters at UNISA, a member of the Scientific Committee of the International School on “Landslide Risk Assessment and Mitigation” (LARAM), and head of the Geotechnical Laboratory of the Department of Civil Engineering of UNISA. He is also chief editor of the *Euro-Mediterranean Journal for Environmental Integration* (Springer) and a member of the editorial board of *Geoenvironmental Disasters* (Springer).



Chedly Tizaoui CEng, FIChemE, FHEA is an Associate Professor in Chemical Engineering at the College of Engineering, Swansea University, United Kingdom. He obtained his first degree in Chemical Engineering (six-year path) from the National School of Engineering at Gabes (ENIG), Tunisia, his MSc from INP Toulouse France and his Ph.D. in Chemical Engineering from the University of Bradford UK. Dr. Tizaoui has been the head of the Chemical and Environmental Engineering Portfolio at Swansea University, and he has research interests in Advanced Oxidation Processes (AOPs) and separation technologies to treat water and wastewater. Examples of technologies he is researching include ozone, UV, and nonthermal plasma, membranes, adsorption and bio-flocculation. He develops and employs these technologies to eradicate contaminants of health and environmental significance such as emerging contaminants, pharmaceuticals, oils, landfill leachates, or phosphates and arsenic. Throughout his academic

career, Dr. Tizaoui has devoted himself to research and scholarly activities and has played a significant role in contributing towards various fundamental and applied collaborative research programs. He has supervised to successful completion over twenty Ph.D. and postdoctoral researchers and has published over one hundred papers in peer-reviewed journals and international conferences, as well as authoring technical reports for several organizations. His research into water treatment technologies has been funded by major funding bodies including the UK Engineering and Physical Sciences Research Council; the Royal Society; the Royal Academy of Engineering, and industry. He is associate editor of *Ozone: Science and Engineering*, and the *Euro-Mediterranean Journal for Environmental Integration* and sits on the editorial boards of several peer-reviewed scientific journals, and has also been a reviewer for many international scientific journals and funding bodies around the world. He is member of the International Ozone Association and member of the EU Ph.D. School of Advanced Oxidation Processes.



Amjad Kallel is an Associate Professor of Environmental Geology. He holds a B.Eng. in Georesources and Environment (1998) from the University of Sfax (Tunisia), and an MSc degree and a Ph.D. degree in Georesources and Environment (2004) from Hokkaido University (Japan). He joined Venture Business Laboratory (VBL) at Akita University, Japan (2005–2006) as a researcher focusing on refining and recycling technologies for the recovery of rare elements from natural and secondary sources. Back in Tunisia, he worked at the University of Gabes from 2006 to 2011, where he contributed to the elaboration of teaching programs at the Higher Institute of Water Sciences and Technologies of Gabes. Since 2011, he has joined the Sfax National School of Engineering (University of Sfax, Tunisia). There, he has also been involved in various research projects related to environmental geology and environmental geotechnics. Dr. Kallel has organized many prestigious workshops, seminars and international conferences. In 2016, Dr. Kallel joined the *Arabian*

Journal of Geosciences and the *Euro-Mediterranean Journal for Environmental Integration* (Springer) as both a chief editor and managing editor, respectively.



Sami Rtimi is a photo-chemist with a strong background in materials science and microbiology. He was awarded a Ph.D. in Chemistry and Chemical Engineering from the Swiss Federal Institute of Technology–EPFL and a Doctorate in Biological Sciences from the University of Carthage (Tunisia). He is investigating the structure-reactivity relationship of functional/smart materials for environmental (indoor and outdoor) and biomedical applications. With an h-index of 24, he published more than one hundred articles in peer-reviewed journals, patents, several book chapters and presented numerous communications at international meetings. He is editor, guest-editor and regular reviewer for several journals. Sami is an international grants reviewer and Ph.D. programs evaluator. He is also active in some NGOs to promote water and health solutions in Least Developed Countries (LDCs).



Sandeep Panda received his BSc degree with honors in Zoology (2006) from Utkal University, his M.Sc. degree in Biotechnology (2008) from Ravenshaw University and his Ph.D. degree in Life Sciences (2015) from North Orissa University, India. He is currently working as an assistant professor at the Department of Mining Engineering (Mineral–Metal Recovery and Recycling Research Group), Suleyman Demirel University, Turkey. His main research areas include bio-hydrometallurgical and bio-mineral processing for metal extraction from primary and secondary resources, bio-desulphurization, bio and chemical approaches for mine water treatment, and the application of eco-friendly approaches for sustainable mineral-metal waste recycling and management. In 2008, Dr. Panda worked as a research trainee at Bhabha Atomic Research Centre, India, for partial completion of his Masters degree and thereafter joined CSIR–Institute of Minerals and Materials Technology, India in 2009 as a project assistant. In 2012 he was selected as the prestigious CSIR–Senior Research Fellow (direct

scheme) by the Council of Scientific and Industrial Research (CSIR), Government of India. He has been involved (as principal/co-principal investigator and as team member) in many R&D and industrial research projects (at both national and international levels) since 2009. As of 2019, he has published thirty-seven international journal papers, and four book chapters of high quality and impact that have received nearly 650 citations (h-index=15). His research works have invited the attention of several press and media outlets. He is an active member of several prestigious professional bodies and a technical/scientific committee member in a number of reputed International conferences. Dr. Panda has served as a reviewer in over thirty reputed international journals and is currently serving as: (1) associate editor of the *Euro-Mediterranean Journal of Environmental Integration* (Springer Publications); and is an editorial board member of: (2) *Frontiers in Microbiology* (Frontiers Publications); (3) *Frontiers in Earth Science* (Frontiers Publications); (4) *Frontiers in Environmental Science* (Frontiers Publications); and (5) review editor of the section *Microbiological Chemistry and Geomicrobiology* (Frontiers Publications). He has edited two reputed joint-editorial books: (1) *Environmental Microbial Biotechnology* (Springer Publications, Switzerland, 2015); and (2) *Applied & Industrial Biotechnology* (2nd edition, Nirmal Publications, India, 2017). He has also received several prestigious academic awards such as: (1) “The Best Research Scholar Award” by CSIR–Institute of Minerals and Materials Technology, India (2010); (2) “The Best Hindi Essay writing Award on Environment” from CSIR–Institute of Minerals and Materials Technology, India (2010); (3) The prestigious “MISRA Award–The Best Paper Published Award 2012” by the Indian Institute of Mineral Engineers (IIME), India (2013); (4) “TÜBİTAK–2216 International Post Doctoral Scholarship–2015” (Research Fellowship Program for International Researchers) from the Scientific & Technological Research Council of Turkey, 2015–2016; and (5) The prestigious “Young Scientist Award” by Odisha Bigyan Academy (OBA), Odisha, India in 2017.



Philippe Michaud is a Professor of Biochemistry at the head of the Biological Engineering Department of Polytech Clermont Ferrand, a school of engineering of the Clermont Auvergne University (France). A Doctor in Microbiology, Enzymology and Bioconversion, since 2005 he has led a research group entitled “Bioprocesses, Biorefinery, Biopolymers and Biosourced materials” at the Institut Pascal (UMR CNRS 6602) consisting of three associate professors and one technician. His scientific skills center on the development of bioprocesses for obtaining poly- and oligosaccharides from various sources (terrestrial plants, agronomic by-products, macroalgae, microorganisms) and analysis of structure–function relationships. He has published 147 research papers and reviews in international peer-reviewed journals in the field of biotechnology and bioprocesses applied to polysaccharides (h-index 34). Professor Michaud is the inventor or co-inventor of twelve patents, three of them with industrial exploitation. He is the author or co-author of nine book chapters. He has been the advisor or co-advisor for eighteen Ph.D. students. Since 2005, he has been in charge of more than ten national and international research projects, funded or co-funded by industry.



Jaya Narayana Sahu was born in 1976. He received a B.Tech. (Chemical Engineering) from Berhampur University, India and a Ph.D. (Chemical Engineering) from the Indian Institute of technology (IIT) in Kharagpur, India. Dr. Jaya has more than fifteen years of teaching, research, consultancy and projects experience. He is the author/co-author of more than 140 papers (Scopus h-index 40). He is presently working at the University of Stuttgart, Institute of Chemical Technology, Faculty of Chemistry, Stuttgart, Germany under the prestigious Alexander von Humboldt Foundation senior research fellowship. He is the chief editor (Topic 7: Smart technologies for environmentally-friendly energy production) of the *Euro-Mediterranean Journal for Environmental Integration* (Springer).



Mongi Seffen gained a Ph.D. in Applied Chemistry at Poitiers, France (1986), and is a full professor of chemistry since 2002. He has published sixty papers in international refereed journals, six patents in the field of waste oil recovery, waste water treatment by the biosorption process and biofuel production starting from biomass. Professor Seffen is the supervisor of ten Ph.D. theses and twelve graduate theses. He is the local coordinator of two FP7 Projects, SOWAEUMED and FP4BATIW, and several bilateral projects: Tunisian–Moroccan; Tunisian–Egyptian; DGRST; ERASMUS⁺; and is associate editor for the *Euro-Mediterranean Journal for Environmental Integration*. He has organized several workshops and scientific meetings. He is a specialist in: waste water treatment, biomass valorization; biofuels; and waste oil recovery catalysis.



Vincenzo Naddeo is Director of the Sanitary Environmental Engineering Division (SEED) at the Department of Civil Engineering of the University of Salerno (Italy) where he drives research activities in the Environmental Engineering fields. He was a professor in visit at the University of Washington (2009) and Yamaguchi University (2016) as well as a visiting scientist at several foreign research institutions where he collaborated with high-ranking professors. Professor Naddeo is founder and general chair of the international conference series WaterEnergyNEXUS, and coordinator of its International Scientific Advisory Board. Since 2014 Prof. Naddeo holds the Italian National Scientific Qualifications for full professor positions in the academic field 08/A2 (Sanitary and Environmental Engineering).

Professor Naddeo's research focuses on advanced water/wastewater treatment, characterization and control of environmental odours and environmental impact assessment (EIA). He developed advanced biological processes for wastewater treatment and control of emerging contaminants, novel ultrasound-based technological processes for the treatment of environmental matrices (solid, liquid and gaseous) and biotechnologies for wastewater re-use with simultaneous energy production within the circular economy. In addition to

the topics listed above, Professor Naddeo has published works on membrane bioreactors (MBRs), water/wastewater disinfection and disinfection by-products (DBPs), Advanced Oxidation Processes (AOPs), river water quality characterization, remediation of contaminated soil and marine sediments, management and treatment of the organic fraction of solid waste, strategic environmental assessment (SEA) and recently on environmental technologies for the sustainable development of smart cities.

At the Department of Civil Engineering Prof. Naddeo teaches: “wastewater treatment plants”, “environmental impact assessment”, “energy and environmental sustainability” and “pollution phenomena and control of environmental quality”. He is the coordinator of several international and national research projects, a supervisor of Ph.D. students, and a member of the scientific boards of several national and international conferences where he was often invited as plenary or keynote speaker.

He is associate editor of *Water Environmental Research* (Wiley), the *Euro-Mediterranean Journal for Environmental Integration* (Springer) and of the *Earth, Frontiers for Young Minds*. He presently serves on the editorial board of several ISI journals including *Desalination* (Elsevier), *Scientific Reports* (Nature Research), *PeerJ* (Life, Bio, Environment & Health Sciences), *Frontiers in Bioengineering and Biotechnology*, *Water* (MDPI) and *Bioengineered* (Taylor & Francis). Professor Naddeo is also actively involved in a variety of scientific organizations, funding agencies, and European networks.

He holds four patents on water and wastewater treatments by sonolysis and one patent on the novel electronic nose (e.Nose). From 2018 Prof. Naddeo has been CEO and co-founder of Sponge s.r.l., a spin-off of the University of Salerno working in the environmental technology field. He has (co-)authored over 200 refereed publications in ISI journals, congress proceedings and book volumes. He is co-editor of the book *Odour Impact Assessment Handbook* (John Wiley & Sons) as well as editor of several Italian books.